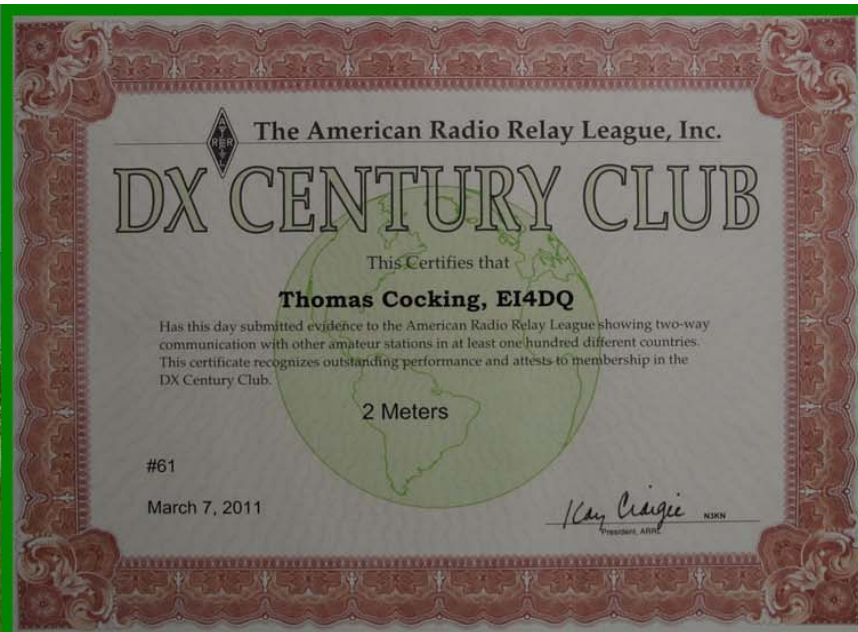




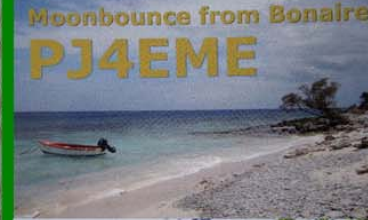
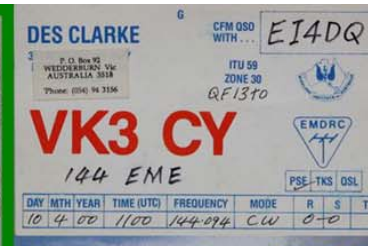
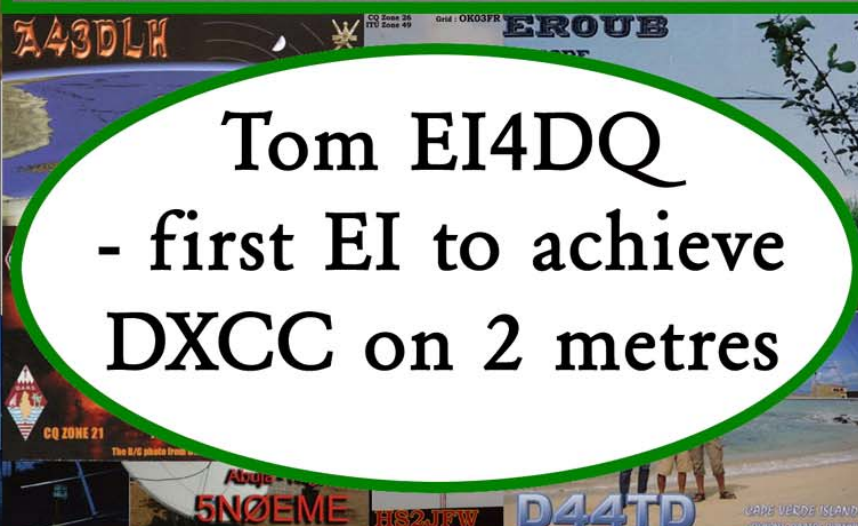
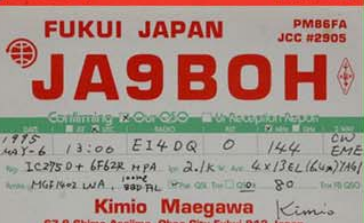
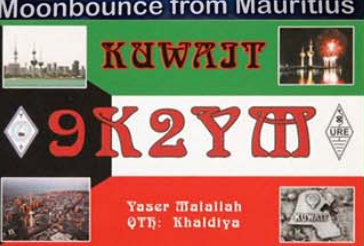
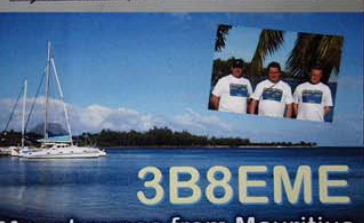
# ECHO IRELAND

Journal of the  
Irish Radio Transmitters Society

October 2011



Tom EI4DQ  
- first EI to achieve  
DXCC on 2 metres





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## News Bulletins and Readers

<b>Sunday</b>				
Dublin	1100	7.055	SSB	Sean EI7CD, Roland EI4GYB, Ger EI4GXB Francis EI5GOB, George EI7GKB (as Gaeilge) Paddy EI7GK, Danny EI6GS
Wicklow	1130	3.680	SSB	Tony EI5EM, John EI7JG, Frank EI6EF, Liam EI3HK
Dublin	1145	145.525	FM	As 1100
Dublin	1200	3.650	SSB	
Mayo	2000	145.600 - 433.450	FM	70.375 - 50.450
			FM	John EI7IQ, Padraic EI9JA, Jimmy EI2GCB
Tipperary	2030	145.450	FM	Tommy EI2IT, John EI2JB, Andy EI5JF, Eddie EI3FFB
<b>Monday</b>				
Cork	2000	145.750	FM	Vincent EI7HN
Limerick	2000	145.725	FM	Brian EI9AL, Simon EI7ALB, Gerry EI3JU, Ger EI4GXB
Louth	2000	145.675		Peter EI4HX, Thos EI2JD
<b>Tuesday</b>				
Waterford	2130	145.650	FM	Francis EI5GOB
North Cork	2000	430.925	FM	Lisa EI9GSB

## Contents

Society Officers & Committee Members:	2
From the Editor....	3
The Sacred EI Call by Bernie EI6AX	3
QSL Bureau Report	4
Limerick Radio Club	5
Report from 2nd IARU Conference	6/7
HF Happenings with Anthony EI2KC	8/11
International Museum Weekend at Howth	11
QRSS Operation by Steve EI5DD	12/13
The EI4J History by EI4GE	14/15
GI HF Conference Report	16/17
AREN assist Sean Kelly Tour	17
EJ3Z on Inishboffin for IOTA	18
Mayo Radio Experimenters Network	19
Magnetic Loops Part 3 by Jack EI7HO	20/21
Howth Vintage Radio Museum DVD	21
The HX Files No. 17 with Pat EI2HX	22
South Dublin Radio Club	23
Contest Corner; VHF FD Results	24
CQWW CW 2010 Results: 80m Counties	25
EI8GGB Portable Satellite set-up	26
IOTA on Rathlin Island	27
DXCC & E-QSL EI Listings	28
DXCC Band Table	29
Members Advertisements	29
SWR - What it means with EI5EM	30
CQWW CW EI Records	31
Contest Calendar	31
IRTS Youth Co-ordinator	31
Operating portable on 500kHz by EI0CF	30
Mayo Rally	34
JBT Trading advert: Rallies	35
South East Communications (Advert)	36

## When is my membership due for renewal?

Your membership renewal date is shown on the wrapper in which the newsletter is posted – above the name and address. For those who receive Echo Ireland by electronic distribution, the renewal date is included in the email alert sent when a new issue is published. Members who pay by direct debit will see “(DD)” after the renewal date.

Use **www.irts.ie/renew** to renew your membership at any time; you can also renew at a Rally, or by sending your annual subscription directly to the IRTS Treasurer.

Please renew early to keep our postage and other costs down. Membership is extended by 12 months from the normal renewal date whenever a payment is received.

**Joe Ryan, Membership Records Officer**  
**memrecords@irts.ie**

## From the Editor.....

I must start this issue with apologies to members, contributors and advertisers for the serious delay in getting this issue to print.

This is one of the problems with voluntary organisations where jobs are in one persons hands and when problems arise, there is no easy solution.

Steps are in hand to overcome this problem and if anyone feels they can help, please make contact with any committee member.

My sincere thanks to all our contributors and I would like to remind everyone that the deadline for the next issue is December 1st and we would love to hear from you.

Our cover this issue features a remarkable amateur. Tom EI4DQ has achieved a long term goal in qualifying for the DX Century Club award on 2 metres.

He worked 122 countries and has submitted proof of contact to the ARRL for 110 of them.

This puts Tom in 11th place in Europe and he is the highest placed station in the British Isles.

We wish him well on his new mission in trying for DXCC on 6 metres.

He is working down from the difficult end and maybe in the not too distant future we will see Tom being the first EI with 11 Band DXCC.

Have a look at his website on [www.qsl.net/ei4dq](http://www.qsl.net/ei4dq)

Congratulations also to Thos EI2JD who has joined Dave EI3IO and Dave EI9FBB with the 10 band DXCC.

It is heartening to see the increased activity on the HF bands as more and more EI stations are chasing the DX.

The statistics from the recent T32C DXpedition to Christmas Island show a record number of EI stations in the log. Congratulations also to Paul EI5DI and Dave EI9FBB who were part of that DXpedition.

We look forward to their reports.

Congratulations also to David EI8GNB was part of the PJ2T team for the recent CQ WW DX SSB Contest.

David currently resides in Canada using the call VA7DXC, but as an Irish national uses his EI call when abroad

### Worked All Ireland

Our Worked All Ireland Award scheme has been dormant for some time.

The Sunday morning call-ins to the news bulletins demonstrate that there are plenty of EI stations active on both 40 and 80 metres

We need somebody to take the responsibility as net controller who would get a net going around news times. Any volunteers?

Don't forget to mark your diaries for the 80m Counties contest on January 2nd See [www.irts.ie](http://www.irts.ie) for details.

73

Dave EI4BZ

## Silent Key GI6DCC

Charlie McCrystal GI6DCC, sadly passed away on Monday the 17th October 2011 following a short illness.

Charlie showed a great love of many things in life, family, music and amateur radio.

Private cremation took place at Rose-lawn Crematorium.

Charlie was father to Karl MI3KAL, brother of Eddie GI7FHZ and uncle to Paul MI6FHZ.

### IRTS Youth Co-ordinator

Following the recent IARU conference in South Africa, members societies were urged to appoint a Youth Coordinator. At the last IRTS committee meeting held on September 10, Ger McNamara EI4GXB was appointed to the role.

Ger is seeking ideas from members on how to best generate interest in Amateur Radio among young people and can be contacted on 087 2532512 or [ei4gxb@gmail.com](mailto:ei4gxb@gmail.com)

### IRTS Committee Meeting

**December 10th 2011**

**1100**

**Maldron Hotel,  
Portlaoise**

### The Sacred EI Call

Sure the hams throughout the world are the genial sort of guys  
With good-humour and good-nature just apopping out their eyes'  
They call and they are happy as the Summer days are long,  
With pilot-lights awinking just to show that they are on.

Yes, good humour and good nature are always to the fore,  
For amateurs are angels who give wings to words galore,  
And the angels up in Heaven are jumping round with joy  
When they hear an Irish call-sign come streaming through the sky.

So if you have a licence with a sacred EI call  
Get on your knees and thank the Lord for blessings one and all,  
For the nearest land to Heaven is this Isle of Destiny,  
Sure the leprechauns are angels who have just gone QRP.

A day will come will surely come when our lives on Earth are o'er  
When our souls take flight from this home of clay to the great eternal shore  
Then our many friends in Heaven will welcome us with joy  
Charmed to have an eyeball with their friends from old EI.

Bernie EI6AX

### Online Access to Echo Ireland

If you would like to have online access to the complete library of Echo Ireland issues from 2001 onwards and receive new issues of Echo Ireland by way of electronic download instead of in hard copy, please advise the Membership Records Officer.

Include your call sign and email address in the request and send it to:  
[memrecords@irts.ie](mailto:memrecords@irts.ie)

### Irish Radio Transmitters Society

**80m Counties Contest  
January 2nd 2012  
1400-1700**

# QSL Bureau Report

At the recent IRTS committee meeting there was a discussion on how to improve the QSL Bureau service to members. The Bureau service is dependent on dedicated volunteers and we all should play our part in making their job as pleasant and easy as possible. After all they could be chasing that DX instead of looking enviously at your card from him!

The committee recognise that the members appreciate a regular service and prepared to fund any additional postal costs incurred in providing such a service. It is intended that incoming managers will forward cards to members every two months by post on condition that there is a minimum of 5 cards in the envelope. This system will run for a trial period of 6 months and then be reviewed.

If your QSL cards are for outside Ireland (EI) you must send them to the out-going department and that is, Tony Baldwin, EI 8 JK, his address is, Rathlin, Dromnea, Kilcrohane, Co Cork.

Please make Tony's job a bit easier by sorting your cards into country groups. Most people are very good at doing this, but there are always a few!

Some people hand outgoing cards to various committee members at club meetings or Rallies, when you do this you could be adding some time to the final destination of the cards, after all that person either has to send your QSL cards to Tony or will wait until he or she sees Tony and give your cards to him to process.

For QSL cards that are for your fellow EI's you now have some choices. You could send them to the individual EI's directly yourself which is of course the quickest route. You could alternatively send them to the particular sub-manager for that station but of course if there is only one station then you could have sent it direct to the station for the same postage. (Yes, some people actually do this regularly!).

You could send them to the inwards manager, Pat Fitzpatrick, 24 Ascal a Dó, Yellowbatter, Drogheda, County Louth. The inwards manager will put your QSL cards into the various bags for the sub managers and the bags are handed or posted to the sub managers after the committee meeting, also Pat EI 2 HX picks all the cards up a couple of days before the meetings, and your QSL cards that arrive to Pat between meetings are placed amongst them.

Managers of special event stations need to let the relevant sub manager know to whom incoming cards should be sent.

One of the biggest chores for the QSL team is returning cards for non-members to the originating country. It would really help if Clubs could inform non IRTS members (we know there are not too many!) to advise people who want cards to 'QSL direct'.

New licensees should note that it can take up to 9 months or more for a card to arrive via the bureau post QSO.

This is because of the many steps in the process in the two countries involved.

## HF Band Plan

A revised IARU Region 1 HF Band Plan has been published.

The changes are minor, and affect 40 metres and 10 metres only.

On 40 metres, the CW contest-preferred segment of 7000 to 7025 kHz has been withdrawn; this means in practice that CW contests on 40 metres are no longer confined to the first 25 kHz segment.

There have also been changes to the FM part of 10 metres, with adjustments to the simplex channels and the addition of four new repeater channels.

See [www.irts.ie/downloads](http://www.irts.ie/downloads) for a copy of the new Band Plan, which includes notes detailing the changes.

## ARISSat-1 and EI

The ARISSat-1/KEDR amateur radio satellite was launched on Wednesday 3rd August.

Among it's contents are entries from schools of students' science experiments.

One EI school, Gaelcholáiste na Mara, Arklow Co. Wicklow had the work of 6 students accepted.

They include experiments on Ohms Law, Magnetic field, Acid & Base neutralisation, Dissolved Solids, & Periscopes. The students' work was under the guidance of their science teacher, Pádraig EI7GK.

Other schools accepted were in USA, Canada, U.K. Australia Switzerland & Portugal.

Being a Gaelcholáiste the work is presented as Gaeilge with an English translation.

The work can be seen at [www.arissat-eu.org/arissat-1.htm](http://www.arissat-eu.org/arissat-1.htm)

There are links to each student's work.

## Heathkit returning to Kit Market.

Older members will be very familiar with the Heathkit brand and indeed many of its amplifiers, ATUs etc. are still in use.

They left the kit market in 1992 after 45 in that business and they recently announced a return to kit manufacturing.

Initially kits will not be for the ham market but they hope to get into making ham radio accessories at an early date.

## Radio News Deadline

### Noon on Thursdays

Input to  
[newsteam@irts.ie](mailto:newsteam@irts.ie)



## Limerick Radio Club

### Below: Tarbert Island

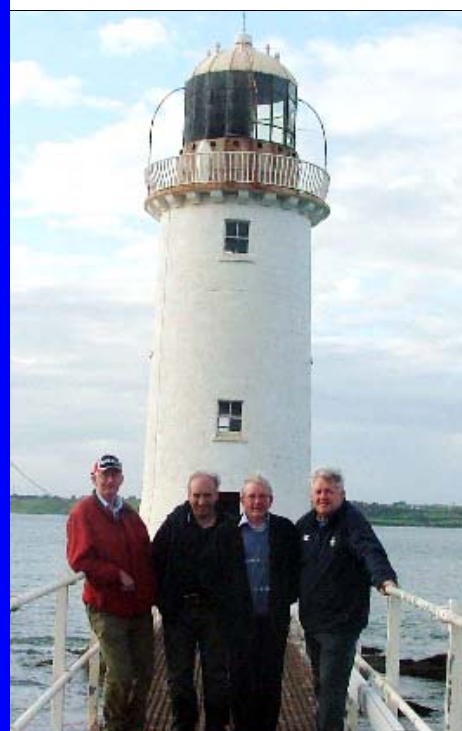
L-R: Brendan EI0CZ, John EI6IW, Mike EI2IX, David EI2GBB

### Shannon Air Traffic Control Centre

L-R: Paddy EI8GY, Lez EI4GEB, Dermot EI2GT, Ger EI4GXB, Declan EI9FVB, Maurice EI3JF, John EI6IW, Brendan EI9GHB, Pat EI8GZB

### Repeater site

L-R: Tony EI2AW, Alan EI8EM, Ger EI4GXB, Gerry EI3JU, Kris EI9GAB.



## AMSAT-UK Space Colloquium Videos available

Thanks to the hard work of volunteers from the British Amateur Television Club (BATC), 14 videos of the presentations given to the AMSAT-UK International Space Colloquium held in Guildford July 30-31 are now available online.

You can watch the videos online at; <http://www.batc.tv/>  
Click on the 'Film Archive' icon  
Select 'AMSAT 2011' from the Category drop down menu  
Click 'Select Category'  
Select the video you wish to watch  
Click on 'Select Stream'  
Click the play icon '>' on the player  
Clicking on the icon to the left of the player volume control will give you full screen display.

You can copy a video file to your PC by clicking on the 'Click Here' link under the player.

Some of the PowerPoint slides can also be downloaded by following the links at <http://www.uk.amsat.org/archives/1649>

AMSAT-UK publishes a colour A4 newsletter, OSCAR News, that is full of Amateur Satellite information. The Spring OSCAR News can be seen at [http://www.uk.amsat.org/on\\_193\\_final.pdf](http://www.uk.amsat.org/on_193_final.pdf)  
Join AMSAT-UK online at <http://tinyurl.com/JoinAMSAT-UK/>

AMSAT-UK <http://www.uk.amsat.org/>

## PW-Sat to launch in January

**PW-Sat**, a 1U CubeSat to be launched on the first VEGA flight in January, will carry a 145 to 435 MHz Amateur Radio transponder.

The single channel transponder will operate in a similar way to AO-16. The uplink on 145.900 MHz will be FM and the downlink on 435.020 MHz will use the BPSK telemetry beacon transmitter to produce Double Sideband (DSB) that can be received on an SSB radio.

PW-Sat will be launched into a 300 by 1450km 69.5 degree orbit and may be expected to have a lifetime of about 2 years before re-entry. It was built by students of Warsaw University of Technology in cooperation with the Space Research Centre

<http://tinyurl.com/CubeSatPW-Sat>

# 22<sup>nd</sup> General Conference of IARU Region 1 Sun City, South Africa By Séamus McCague EI8BP

The 22nd IARU Region 1 Conference opened on Saturday 13 August 2011. 133 delegates representing 54 Member Societies as well as IARU Headquarters and the other two IARU Regions were in attendance. The Society was represented by the Vice-President, Séamus McCague EI8BP and Ger McNamara EI4GXB.

Throughout the conference, various meetings took place and recommendations put forward to the relevant committees: Committee C2 (Credentials and Finance), Committee C3 (Administration and Organisational), Committee C4 (HF) and Committee C5 (VHF/UHF and Microwave).

The recommendations from these committees then went to a final plenary session on Wednesday 17 August.

The minutes of the final plenary which stretch to 21 pages and over seventy recommendations are available at [www.iau-r1.org >Documents > Conferences >2011 - Sun City General Conference](http://www.iau-r1.org/ Documents / Conferences / 2011 - Sun City General Conference) and so it is not proposed to reproduce them here.

Focussed workshops were held covering WRC-12, STARS (Support to the Amateur Radio Service) and Youth in Amateur Radio, together with meetings of various working groups including EUROCOM, EMC and ARDF.

This was the first time in the history of IARU Region 1 that the General Conference had taken place on the African Continent.

Also for the first time, IRTS had submitted a paper on transnational operation which was discussed by Committee 4 (HF).

Both EI4GXB and myself attended all the plenary sessions and the presentation of the IRTS paper. As committees meet simultaneously, starting at 0830 and finishing at 1800, it requires two delegates to adequately cover proceedings.

It is a long day and on several evenings there were workshops that ended at 2230. I focussed on EUROCOM, EMC, C3 and C4 with Ger active in C5 and STARS, where he contributed to the development of the final proposal in a working group.

The conference was opened by Hans Blondeel Timmerman PB2T IARU Region1 President in the presence of Mr Brahima Sanou, Director of the ITU Telecommunication Development Bureau, Mr Sourmaila Adoukarim, Secretary General of the African Telecommunication Union (ATU), Mr Mohamadou Arabani Saibou, Director General ESMT – Ecole Supérieure Multinationale des Télécommunications (Senegal) and representatives of IARU, IARU Region 2 and IARU Region 3.

In his formal opening address Mr Brahima Sanou, representing ITU, spoke of the amateur radio service as a very important public service.

With its definition and objectives clearly stated in Article 25 of the ITU Radio Regulations the IARU is truly an important and vital global community.



He continued: “IARU Region 1 successfully represents the interests of all radio amateurs on various ITU-R and ITU-D study group meetings; and based on the MoU signed between the IARU and BDT, we are looking forward to IARU representation and contribution to our regional and sub-regional seminars or workshops”.

Mr Sanou noted that the cooperation between ITU and IARU has been great. During his days as ITU Regional Director for Africa, the two organisations co-financed many joint training activities with IARU with particular emphasis on the role of radio amateurs in emergency situations.

He would like this cooperation to be strengthened as radiocommunication is a technology of choice when terrestrial networks are destroyed by natural disasters. He commented “For us who are committed to ensuring that radio resources are used to save lives in emergencies, we do salute your efforts”.

## WRC

There was discussion about an amateur allocation at 500kHz. At the moment there is no clear picture as to exact frequencies but the aim is to obtain 15kHz on a secondary basis in the range 415- 526.5 kHz on a secondary basis. This may be in two segments with one at 472-480 kHz.

The following priorities were established for future WRC conferences: a harmonized allocation including amateur-satellite at 50 MHz, a wider harmonized allocation at 160 meters, expansion of the 10 MHz amateur allocation and a worldwide, secondary allocation of approximately 150 kHz at 5 MHz.

## IRTS Paper

The IRTS paper was preceded by a paper by RSGB regarding CEPT operation. It was agreed that member societies should bring to their members attention that the T/R 61-01 agreement only applies to people using their own call sign, with the appropriate country prefix, when the operator is actually visiting that country, not for remote operation.

The IRTS proposal regarding the use of remote operation in contests met with some opposition and in the end it was agreed that the HF Committee be mandated to look into remote operation. I will be keeping in touch with the Chairman of the Committee on the matter.

Among the decisions taken at the final plenary were:



## Administration

- That IARU Region 1 create a permanent Political Relations Committee (PRC) consisting of members of the executive committee and Region-1 experts selected by the EC to deal with relations with political and governmental entities and related matters. The PRC takes over the tasks of the EUROCOM WG. The latter is then discontinued.
- To further monitor the situation on EMF exposure regulation and start to assess the consequences of getting a common European solution with ICNIRP limits.
- To promote activities for handicapped amateurs as part of the International Day of Persons with Disabilities on 3 December.
- To safeguard Morse Code as an Intangible Heritage.
- Each Member Societies appoints a youth co-ordinator and/or establishes a youth working group in order to ensure the growth of amateur radio.
- That member societies should establish and maintain a close contact with their national standardisation bodies with the aim of membership and active engagement. Member Societies should appoint a point of contact, who can be contacted by the EMC WG, in case of comments on drafts, relevant to the amateur service or voting by national standardisation organisations.

## HF

- That member societies should bring to their members attention that the T/R 61-01 agreement only applies to people using their own call sign, with the appropriate country prefix, when the operator is actually visiting that country, not for remote operation.
- That the C4 Chairman is mandated to set up a sub-group to examine the question of transnational remote-controlled operation and to establish under what conditions such operation might, if ever, be regulated and to issue its findings in due course.
- That the CW contest-preferred segment from 7000 – 7025 kHz is withdrawn from the Region 1 band plan.
- Expansion of the 10 MHz band shall be given high priority when talking with administrations and by IARU when negotiating with authorities.
- That IARU at further ITU World Radio Conferences should seek to expand the international amateur radio 160 metre band from its present lower end of 1 810 kHz to 1 800 kHz in ITU Region 1. IARU should also try to obtain an international secondary allocation for amateur radio between 1 850 and 2 000 kHz in ITU Region 1.

## VHF/UHF

- To minimise mutual unwanted interference, all FM repeaters will incorporate CTCSS tones on receivers as well as on transmitters. The transition period ends by the end of 2014.



Ger EI4GXB operates ZS6IARU, with EI8BP in the background

- Modification of 6 m Band Plan
- Establishment of a genuine IARU Region 1, 70MHz band plan
- Additional 2m Digital Voice Channels [below existing repeater channels]
- Revised 1298–1300 MHz Band Plan

It was also announced at the final Plenary that The Roy Stevens, G2BVN, memorial Trophy was awarded to Tafa, Diop, 6W1KI. (IRTS was chosen to sit on the Award Committee). The Trophy is in memory of the late Roy Stevens G2BVN who was a long serving Secretary of IARU Region 1 and is awarded for outstanding service to International Amateur Radio. The announcement of the award was greeted with a well deserved standing ovation. The final business of the Conference was the selection of the venue for the 2014 Conference with Russia, Netherlands/Belgium and Bulgaria making presentations. In a vote, Bulgaria was selected by a large majority. The conference will be hosted by The Bulgarian Federation of Radio Amateurs (BFRA) in Varna on the Black Sea in September 2014.

## IARU Officers

President:	Hans Blondeel Timmerman, PB2T
Vice-President:	Hani Raad, OD5TE
Secretary:	Dennis Green, ZS4BS
Treasurer:	Andreas Thiemann, HB9JOE

## Conclusion

Common strategies throughout the IARU are developed at these Conferences and at similar ones in Regions 2 and 3. It is these common strategies that achieved the 10, 18 and 24 MHz bands at WARC'79, the expansion of the 7.0 MHz band in Regions 1 and 3 at WRC'03 and secured agreement at WRC'07 to place consideration of an allocation at 500 kHz on the agenda for WRC'11. It is important that the Society be represented to help in the future development of Amateur Radio.



# HF Happenings

with Anthony Murphy EI2KC

As we rush headlong towards the winter-time, which brings its own rewards in radio, especially on the lower bands, we can reflect on what has been a truly spectacular summer. There has been so much happening on the bands that it is hard to keep up with the action, and difficult to imagine where to begin.

## Southern Sudan

Probably the most significant single development during the past few months was the creation of a new country in Africa called Southern Sudan, which became an independent state on July 9<sup>th</sup> 2011. Five days later, South Sudan became a United Nations member state. A DXpedition using the callsign STOR, which was led jointly by N6PSE and EA5RM, began operations from South Sudan in July and within a very short time they found themselves amidst some of the biggest pile-ups the amateur radio world has ever seen. The reason for the extent of the pile-ups was obvious – every ham in the world interested in chasing DX would want the new DXCC in their log.

Regrettably, the nature and extent of the pile-ups brought out the very worst in ham behaviour. There was an enormous amount of QRM, some of it accidental and some intentional, both on phone and CW, and of course digimodes. The CW piles were as much as 20 or 30 kHz wide and more, and in the early days it could take quite a while for the STOR ops to pick out a single call from the wall of noise.

Smaller stations like mine just cannot cope with the big gun stations with their multi-element beams and big power. So I took a decision not to even try to find a way through – it was simply impossible. I'm sure there are many EIs who found themselves in the same unenviable position. Many of us are operating with 100 watts and small antennas from modest properties.

It was good decision to wait. The pile-ups with any DXpedition always thin out towards the end as more and more ops get them into the log and less and less are calling. It turned out alright for me, as I finished with seven QSOs which I was extremely happy with. Heartiest congratulations to all the EIs who made it into the log. There were a total of 279

QSOs with EI stations. Unfortunately, STOR's online log does not show a "league table" of the leading EI stations, so one has to manually type in all the callsigns to see the various results. I think, but I'm open to correction, that John EI7BA was top of the pile with 21 QSOs, followed closely by Doug EI2CN with 20 and Thos EI2JD with 15. Well done all. Special mention to Doug who, although licensed for some 40 years now, made his very first RTTY QSO with STOR. Congratulations to all the Irish hams who worked STOR. It was a great achievement to get a new one into the log.

## T32C Kiritimati (Christmas Island)

One recent DXpedition, which is ongoing as I write this, is the T32C Christmas Island activation. It is the most exciting DXpedition from an Irish viewpoint because two Irish operators will be among the group who are operating from Kiritimati in East Kiribati. Paul EI5DI and Dave EI9FBB will be just two of a team of 41 operators who will activate Christmas Island for a month between September 28 and October 26. The DXpedition is being organised by the Five Star DXers Association (FSDXA) and will operate using the callsign T32C.

Why Kiritimati? Club Log shows that East Kiribati, where Kiritimati is located, is the 36th most wanted DXCC entity by European operators and 61st most wanted worldwide. It is even more sought after on the LF bands.

On its website (<http://www.t32c.com>), the team says, "During our time on the island we want:

- \* To operate to the highest standards - we support the DX Code of Conduct
- \* To make contact with 40,000 different stations (uniques)
- \* To give every DXer, wherever based, a chance to contact T32
- \* To exploit all openings to Europe
- \* To contact between 1,000 and 2,000 different stations in the UK
- \* To exceed 150,000 QSOs
- \* To win back some of the world records previously held by FSDXA
- \* To place an emphasis on the LF bands
- \* To have up to 15 stations on the air simultaneously
- \* And, oh yes - to have some fun!"

No doubt they are having great fun. We wish all the best to Paul and Dave for a great trip and good luck to all the EI ops who will try to get into their log. I'm sure Paul and Dave will be keeping a very close ear out for the "dit dit-dit" prefix!! As I write this there are no fewer than 43 EI calls in the online log, with two and a half weeks still to go, which is quite an achievement. No doubt by the time you read this that figure will be much higher.

## 4W6A East Timor

4W6A was QRV from Atauro Island (IOTA OC-232), Timor-Leste (East Timor), from 16 to 26 September 2011. Activity was on all bands 10 to 160 metres, using CW, SSB and RTTY with up to four stations simultaneously. The QSL manager is M0URX, direct (SAE plus 1 IRC / \$2), via the bureau, or LoTW. The entire log was uploaded to LoTW after the end of the operation. 32 EIs made it into the log. Top of the pile on four QSOs apiece were Eoin EI9O, Declan EI4GJB, Tony EI7JN and Thos EI2JD. I managed two QSOs which I was chuffed with. Well done to all the EI ops who got through.

## VK9OL Lord Howe Island

Celebrating his 75th birthday (and 60th year in ham radio) Merv N6NO was active from Lord Howe island as VK9OL between September 10-18. Merv focused on CW and openings to Europe, so for those of you who missed out on the elusive VK9HR, this was your chance for redemption!! I was utterly delighted and thrilled to work Merv on 30m CW on the evening of September 15<sup>th</sup>. A real treat to get this rare one into the log. Lord Howe is the 76<sup>th</sup> most wanted DXCC according to Clublog.org.

## Other recent dxpeditions

The DX Coffee team were in Africa to activate **Benin as TY1KS**. Many EIs worked them, with Thos EI2JD topping the pile with 11 QSOs, EI0W (Dundalk Contest call) on 7, and Bernard EI4II and Tony EI7JN both on 5. I even managed a QSO myself on 10 metres which was nice.

A group of German hams activated **Ascension Island** in the mid Atlantic as **ZD8D** in late July and early August. A total of 41 Irish hams made it into the

(Continued on page 9)



(Continued from page 8)

log. Top of the list was Thos EI2JD on 11 QSOs, followed by Paddy EI1DG on nine, and Eoin EI9O on eight QSOs. Well done to all who made it through.

**Jan Mayen Island** in the Arctic Circle, located between Iceland and Svalbard, was activated by a multi-national team in July. Their activity, under the callsign **JX5O**, was cut short by a number of days when the captain of their yacht announced they would have to leave the island early due to the predicted onset of bad weather. 39 EIs made it into the log. There were four of us who topped the list on six QSOs apiece – Declan EI6FR, Ark EI9KC, John EI7BA and my good self. Well done to all who got through before JX5O went QRT early.

Ask the average Joe Soap where **Market Reef** is and they probably won't have a clue. Well, it's a tiny island extending to just 8.2 acres, (more like a flat clump of rocks!) in the Baltic Sea and is historically well known by radio amateurs as a very desirable DXCC entity, OJ0. During August it was activated by two Dutch and two Belgian amateurs using the callsign **OJ0UR**. 46 EI calls were logged. Top of the pile was Thos EI2JD on 10 QSOs followed by three EIs on seven QSOs apiece: Don EI6IL, Declan EI4GJB and Ark EI9KC.

This was followed by **OJ0X** in September and October which saw lots of EIs get this rare entity on lots of band slots. At the time of writing there were no fewer than 81 Irish calls in the log. Top of the pile is Thos EI2JD on 19, with Seamus EI3KE in second place on 13 slots and three of us sharing 12 – Peter EI7CC, Ark EI9KC and myself.

A team of eight amateur radio operators from Australia and the USA activated **YJ0VK** from Port Vila on Efate Island (**Vanuatu** in the Pacific) between September 30th and October 12th. QSL via VK2CA, direct or by the Bureau. LoTW log upload will be available on completion of operation. A number of EIs made it into the log. I was thrilled to work them on 20m CW during the CW portion of the Oceania contest in October. For updates, visit the YJ0VK Web page at: <http://yj0vk.odxg.org/yj0vk2011/default.html>

**3D2R** was the call for a DXpedition operating from **Rotuma Island** in the Pacific during early October. A number of Irish amateurs worked Rotuma, myself included, but it was tough going. Their online log does not have a league table so

without searching for the individual calls I am not sure who worked them the most. Many dedicated DX hunters found this one tough, with a few only getting one QSO. But like me I'm sure they were delighted to get this rare one in the log. Clublog lists Rotuma as the 30<sup>th</sup> most wanted DXCC.

**D9A** was the special event callsign for the 20<sup>th</sup> Asian Conference on Intellectual Disabilities (ACID) running from South Korea from 19-14 August. Only eight EIs made it into the log, myself included, all with just one QSO apiece. I did work them on a second band, but they busted my call and I am in the log as EA2KC. The successful Irish hams to make it into the D9A log were: EI8H, EI2KC, EI9KC, EI9JU, EI3Y, EI2JD, EI0W and EI7JN. Well done all on getting this nice call into the log.

### Propagation

It has become customary for me (this is only my third column Hi!) to summarise the propagation and band conditions over the previous couple of months. You may have read on the internet that some experts believe we are heading into an extended solar minimum, known to space scientists as a Maunder Minimum, named after the solar astronomer Edward W. Maunder. Certainly it had seemed for a while as if the sun was pretty dead. But there have been many other times when sunspot numbers went way up. At the end of July there was a sudden outburst of massive sunspots and some of these erupted, hurtling huge amounts of material out into space, and towards earth. There were several M-class flares and indeed aurora borealis was reported in Scandinavia during that period. There was an opening on six metres (50 MHz) that night, well into the night, in northern latitudes. The activity had some very interesting effects on the HF bands. If anything, the solar commotion had a detrimental effect. The bands went quiet, as Michael EI3GYB reported to me in an email:

*"Big fluctuations in the signal levels. Sometimes 18 MHz was up to 59, then it dropped out and 21 MHz was up to 59. Up and down in both bands until about 1300z when the whole bands went completely dead within minutes. No signal at all from top band down to 30 MHz, no Morse, no digi. Just silence and a crackling sound. Broadcasting bands- empty... as if someone had pulled a plug... A classic Moegel-Dellinger effect. Very frustrating, but also fascinating: Out of nothing a Danish station called on 18 MHz. I*

*came back to him and he answered. I asked him to check the bands on his side and he had a listen around - the same there. His signal went up to 59 plus 40 and started to drop like a stone... Same with my signal on his side. We were bouncing around like yo-yos. Then total silence ..."*

I encountered the same effect at my station, where I found that day a number of the bands seemed to go completely quiet for a time. Very strange indeed. Those are the times when one should check VHF for aurora propagation. (But I promised not to talk about VHF in this HF column!!)

Towards the end of August there was another significant rise in sunspots, just a day after the sun seemed reasonably quiet (see photo). There were great openings on 12 metres around this time, and several EIs logged VK Australia, JA Japan, HL South Korea, P29 Papua New Guinea, and other exotic DX in Asia and Oceania during this exceptional good spell.

As I write this it is now early October and there has been a significant lift on 10 metres, with Irish hams reporting great DX worked. The solar flux on one day at the end of September hit 190, which led to fantastic conditions on 10 and 12. Indeed on a number of evenings I worked many US stations on 12 CW well into the evening, up until 2300. These included west coast stations in California, Washington State and Nevada. These conditions have led to a number of EIs working the T32C DXpedition on 10 and 12 metres, something which simply would not have been possible even a few months ago.

It is worth remembering that, regardless of the level of activity on the sun, there is always DX to be worked. Even in the quietest lulls the DX can be pulled out with even modest antennas and equipment. I am a tad obsessive about sunspots, particularly because I have a keen interest in astronomy, but most amateurs are happy to listen on the bands for DX without necessarily keeping a regular check on the sunspot numbers. And rightly so.

**12 metres** can throw up surprises as mentioned already and is worth keeping an



Paul EI5DI



Dave EI9FBB

(Continued on page 10)

(Continued from page 9)

ear on. One morning in August I worked 85 QSOs in about three quarters of an hour after putting out a CQ on CW. I got a big pile-up going, much to my surprise and delight, and put five new DXCCs into the log, admittedly most of them European.

### Contests

Contests often provide good opportunities to work DX. One of the best of the year for EIs is the **Worked All Europe Contest**, which this year took place on August 13<sup>th</sup> and 14<sup>th</sup>. I picked up Australia, New Zealand, Indonesia, Guam, Hawaii and Tanzania during that weekend. One does not have to be an enthusiastic contesteer to work the DX – indeed, so long as you give a serial number, you don't even have to submit a log. Give them some points and get a bit of DX into your log at the same time. ZM1A in New Zealand on 40 metres gave me a brand new country on that band, never worked before.

**IOTA (Islands on the Air)** is another major event in the contesting calendar. This year a team of Polish and Irish ops activated Great Blasket Island EU-007 under the callsign EJ0PL. The team used a hexbeam for 20m through 6m and inverted V dipoles for 40/80m. Power was 400 watts and the transceiver used was an Icom 756 ProII.

According to Ark EI9KC, there was also activity on the WARC bands before and after the contest.

### Congratulations

Congratulations to Thos EI2JD, who has already had several mentions in this column, on becoming only the third Irish Amateur to attain ten-band DXCC status. Only Dave EI9FBB, Dave EI3IO and Thos hold this rare privilege.

To work 100 DXCC entities on each band from 160m through 6m is in itself a major achievement. But to confirm by QSL 100 DXCCs on each of those bands is an entirely different story.

Thos is well known for his work with the IRTS and as Contest Manager, and also in his role as Chairman of Dundalk Ama-

teur Radio Society, and is familiar to amateurs around the world as one of Ireland's big DX hunters. He is also the manager of the Dundalk Contest Team EI0W. Well done Thos, and congratulations on this major, well deserved, accolade.

## Forthcoming DXpeditions

### FR/DJ7RJ Reunion Island

Willi, DJ7RJ will be returning to Reunion Island in the Indian Ocean and operating as FR/DJ7RJ from October 4 – 26, 2011. He hopes to focus on low bands running a K2 and a 500 watt amp into an inverted L antenna.

### A52AB Bhutan

Andy, UA3AB will be active from Bhutan between October 25 to November 1, 2011 as A52AB. Participation in the CQ WW DX SSB Contest (29-30 October) expected in the SOSB 15m category.

### 5V – Togo

Arnauld, F4FOO, will be active as 5V7MA from Togo between December 19th and January 4th. Activity will be limited to his free time on 20-10 meters SSB only. QSL via his home callsign.

### 5X, Uganda

Nick, G3RWF, will once again be active as 5X1NH from Uganda starting November 23rd for three weeks. Activity will have an emphasis on low bands using a new amp. QSL via his home callsign.

### 8Q, Maldives

Seiji "OKU", JK1KSB, will once again be active as 8Q7SO from Mirihi Island Resort (AS-013, WW Loc MJ63jo) at South Ari Atoll between October 28th and November 3rd. Activity will be holiday style on 80-10 meters using CW, RTTY, SSB and PSK31. QSL via JK1KSB, by the Bureau or the address on (QRZ.com).

### TU2T – Ivory Coast

A team of Italian operators has announced that they will activate Ivory Coast on dates yet to be announced in October/November of this year. They will operate with the callsign TU2T. For more information as it emerges about the dates of their dxpedition, visit their website at <http://www.i2ysb.com/joomla5/>

### AH0, Mariana Islands

Kan, AB2RF/JJ2RCJ, will be active as AH0/AB2RF from the Saipan Rental Shack on Northern Mariana Island (OC-086) between November 2nd and 5th. Activity will be focused on the low bands, RTTY and PSK. QSL via JJ2RCJ, direct or by the Bureau or LoTW. For

more details about the Saipan Rental Shack, see web page: <http://saipan.rental-shack.com/english/index.html>

### CY0, Sable Island

Look for Alan, VE1AWW, to return to Sable Island again on October 5th and stay until the end of the year. Activity will be limited to his spare time using just a vertical and dipole. QSL via his home callsign.

### EL, Liberia

Once again members of the VooDoo Contest Group will be active from here beginning November 21st.

This is their 23rd straight year, but this time it will from a location just South of Monrovia, the capital of Liberia. Their main goal is to be an entry in the CQWW DX CW Contest (November 26-27th) as a Multi-Multi category using the callsign EL2A. Outside of the contest, the following mentioned operators will use their own personal callsigns: Ned/AA7A (EL2NS), Roger/G3SXW (EL2A), Fred/G4BWP (EL2WP), Mike/KC7V (EL2MF), Lee/KY7M (EL2LF) and Bud/N7CW (EL2CW). QSL via their home callsign. Logs will be uploaded to LoTW.

### HU, El Salvador

Mario, YS1GMV, and a team of operators will be active as HU1YS from "Club de Radioaficionados de El Salvador" (C.R.A.S.) in San Salvador during the CQWW DX SSB Contest (October 29-30th) as a Multi-Single entry. QSL via EA5GL.

### ZL – New Zealand Rugby World Cup

To celebrate the Rugby World Cup which runs from September 9th to October 23rd, New Zealand amateurs are permitted to use the ZM prefix in place of their normal ZL throughout September and October. In addition, special event stations are already on air, including ZL4RUGBY, operated by Paul ZL4PW, and ZL6RWC, operated by various members and friends of the Papakura Radio Club.

I already have both these calls in my log so listen out for them and give them a call. The team will be making a special effort to contact amateurs in countries whose teams are playing in the lead up to their games, but naturally we welcome QSOs with rugby fans and DXers everywhere.

Unfortunately Ireland lost to Wales in the quarter final but not before a lot of EIs bagged these nice callsigns.

Thanks once again to DX-world.net and OPDX for information on DXpeditions.

(Continued on page 11)







## Lord Howe Island

by Eoin Fagan EI9O

Lord Howe Island — widely regarded as the most beautiful island in the South Pacific, Just 11 km long and 2 km wide. It's less than two hours flying from either Sydney or Brisbane off Australia's east coast. It is one of just four island groups to be inscribed on UNESCO's World Heritage list for the global significance of its natural beauty and heritage.

All Amateurs who spend any time chasing "New Ones " will know that the Pacific DXCC entities are by far the hardest for EI's to Work, this is because if signals are long path across South America, we have to battle through the USA, and if they are short path over South Eastern Europe then we have to battle all of Europe, Russia and Japan, (not easy).

In late July a team of operators headed by Tommy VK2IR landed on Lord Howe Island and were QRV as VK9HR from the 23rd July to 2nd Aug. During that time they made ~15000 QSO's of which only ~20% were made into Europe.

This contact for me was a "New One" and to get them on two bands was a bonus. As with most Pacific contacts the best time to work them is in the morning and if signal are long path even better, VK9HR was no exception.

When I worked the VK9HR, I had to wear the headphones as the signal strength was only a 5/2, but to hear your call sign come back over a distance of more than 22,000 km is a real thrill. What struck me after my contact was how we should not assume that just because a DX station may sound very weak, this doesn't mean he won't hear you, as with the 20M contact, long path, I only called twice or three times to make the QSO.

For those younger operators chasing DX , (including me hi) my advice is get the headphones on, dig in, listen very carefully for the weak ones and never assume he won't hear your callsign just because he may be weak with you.

Finally well done to the VK9HR team (great ears & LOTW Confirmed) and to the 3 other EI operators, EI7AU, EI8H & EI9JU who made it into the log.

*(Continued from page 10)*

### Contact EI2KC

Don't forget if you have worked a rare one or want to share your experiences working the DX, please let me know. I want this to be a column about Irish hams and their experiences with HF. I am encouraged by contributions already put forward. I'd hate this to become a column only about what EI2KC is working, to the exclusion of others.

You can email me at hamradioireland@gmail.com. I'd love to hear from you, whether you worked Australia on 5 watts with an attic dipole or you made your own HF radio, or you got your 200<sup>th</sup> DXCC into the log or you encountered some interesting conditions on the bands. Please do let me know!!

For now, until next time,  
73 and good DX de EI2KC Anthony.

## Howth Museum EI0MAR International Museums Weekend



Joe Dillon EI4FV



EI7GOB



Tony EI5EM

# An overview of QRSS operation

By Stephen Wright EI5DD

QRSS is a unique way to experiment with extraordinarily weak signal radio communications. Whilst "QRS" is a very old code for "send slowly" used by Morse code operators of old, "QRSS" is an adaptation by modern radio amateurs meaning "sent even MORE slowly"!

So slowly, in fact, that in equivalent morse code terms, one "dit" can take 3 to 10 seconds to send or longer, meaning that an average word (such as "Morse") takes over 8 minutes to send! QRSS is a means of transmitting of an extremely low power signal using a Manned Experimental Propagation Transmitter (MEPT). Why send so slowly, you may ask? The answer is that the slower you send, the less bandwidth you use, known as the Nyquist theorem

*(The Nyquist Theorem, also known as the sampling theorem, is a principle that is followed in the digitisation of analog signal. For analog-to-digital conversion to result in a faithful reproduction of the signal, slices, called samples, of the analog waveform must be taken frequently. The number of samples per second is called the sampling rate or sampling frequency.)*

By the time you send as slowly as QRSS, your communications bandwidth is less than 1Hz. The obvious disadvantage is that it takes an incredibly long time to transfer information. Yet there are also advantages, namely that the amount of noise (atmospheric and man-made interference) present in that same fraction of a Hz fragment of the radio spectrum is dramatically reduced compared to the usual bandwidth of say 9KHz occupied by commercial AM radio stations.

This massive improvement in signal-to-noise ratio makes reception of flea-powered transmitters possible literally on the other side of the world.

For example, 0.5mW transmissions from Maryland, USA on the QRSS experimenter's favourite 10.14MHz frequency were received in Perth, Western Australia at a distance of 11,500 miles (18,600 km).

Whilst the improvement in signal-to-noise ratio with decreasing bandwidth has been well understood for many decades,

modern computing power has made it possible to enjoy experimentation in your home or even when mobile.

Freely available Fourier analysis software running on your PC makes it possible to resolve bandwidths at a fraction of a Hz.

Such software can be found in the form of "ARGO" or "Spectran" to mention just two, although there are many more.

QRSS is a fascinating way to learn more about propagation effects and signal transmission over great distances. Many interesting phenomena become visible, such as splitting of the signal due to doppler effects in the shifting ionosphere.

Reception of QRSS maybe performed via the station receiver or perhaps by the use of a receiver especially purpose built.

A novel miniature receiver may be found on the website of Han Summers, G0UPL, at the following URL <http://www.hanssummers.com/>

Apart from a stable receiver, it is necessary to place some kind of digital modes interface between the receiver and the computer. These interfaces can be easily obtained from E-bay or better again the use of an external soundcard device can make life easier. The Tigertronics interface is one such device that makes life very easy with fine tuning of transmit audio output or receive audio input.

To experiment with reception on the home station receiver or transceiver one needs to tune to the desired frequency e.g 10.140 MHz needs the receiver to be tuned to 10.139 MHz on USB likewise the popular frequency 7.000 MHz on USB.

Firstly, there will be very little to be heard on frequency as it should be borne in mind that these signals are weak and

sometimes well below the noise floor of the receiver. Many transmitter are only sending out milliwatts of power. The use of ARGO is probably the simplest method of decoding signals and initially there will be several traces seen on the vertical waterfall. By clicking in the middle of them will result in a horizontal display which will now give a high resolution display slowly moving from right to left.

Signals will show up as white lines. There is very little setup to this program making it the ideal system to familiarize with QRSS more complex solutions are available.

Three modes of operation can be used, traditional CW, Frequency Shift Keyed CW and some of the more technically brilliant send Hell Shreiber signals which

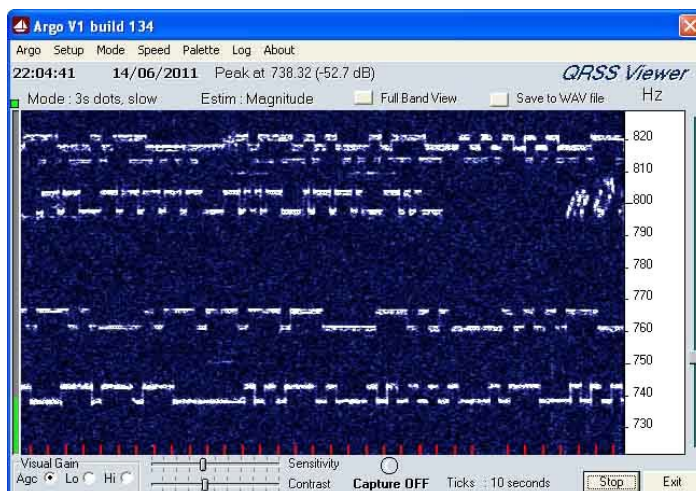


Fig. 1

manifest as actual letters and figures in the waterfall display. It should be stressed at this point that one dit can last up to 10 seconds although 3 seconds is the norm. Many favour FSKCW, where the oscillator is shifted very slightly to produce a higher signal frequency for the mark (or positive signal). The shift, however, is very small, usually only a matter of a few Hertz.

Fig.1 shows a typical real time grab of a chunk of spectrum only 80 Hz wide from 7.000 MHz at 2100 with the receiver in USB mode and no filtering switched in. There are four modes illustrated in this example.

From top to bottom - Frequency shift CW where the CW is read from the higher, mark frequency in this case the LA5 is clearly visible. Just below is a traditional slow CW signal from G3AFB. The next signal is from M0XPD. The signal is sent in Frequency Shifted CW and followed





**Fig. 2**

by his callsign in Hell Shreiber mode where the M0 is just coming on screen. The last two signals are FSK CW where a G1DV? and F5AHO are clearly visible. The power transmitted from these stations would probably be less than 175mW at the very most.

#### **Transmission of QRSS.**

It is unlikely that any commercial transceiver will be capable of transmitting an extremely low powered QRSS signal. For a quick solution, consider buying one of the many low power (QRP) kits that are currently available.

Next, one needs a means of keying the transmitter- preferably not by hand! The method chosen by many is a pre-programmed integrated circuit such as the Atmel ATtiny13, the AVR, PIC, or perhaps the PICAXE. If you are not an aficionado of this particular type of technology, then help is at hand in the form of commercially available units which come pre-programmed.

Kits are available from the Hans Summers Website for as little as £12.00 including postal costs - see fig 2. 40 and 30 metres seem to produce exceptional results but any band, including 6 metres, may produce impressive results with a mere 100mW. The circuit boards are small enough to be accommodated in an Altoids tin illustrated in fig 3.

The primary design consideration for a



**Fig. 3**

QRSS transmitter is, without doubt, stability. Given that we are transmitting a tiny signal within a very narrow band of frequencies, it is of the utmost importance that our signal does not drift. If you are not fortunate enough to possess a digitally synthesized VFO, then the chances are that you will opt for crystal control.

A crystal heater will also aid stability, as will putting the finished article in an insulated box. There is very little to setting up the transmitter apart from setting the frequency shift and power output. As the transmitter is sending such a low power signal it is possible to run it from a battery or even a "wall wart" power supply.

To see how far the transmission are being propagated it is necessary to consult one of the many websites dedicated to displaying their reception of signals via a screen grabber.

One such useful site may be found at <http://digilander.libero.it/i2ndt/grabber/grabber-compendium.htm> this site has a large number of contributors from various continents.

Another good site is <http://www.on5ex.be/grabber/grabber.html> probably, this one will reveal your initial tests. There are many more grabbers that may be found via the internet.

In conclusion QRSS is, without doubt, one of the best and most effective methods of experimenting with propagation of weak signals using a minimalist approach. There are many kits available for the home constructor. As this is an extremely low power mode the number of components and the complexity is minimal and low cost is an added bonus.

Apart from the experimentation into propagation conditions there are countless opportunities to experiment with antennae and feeders from VLF to SHF. Power supplies for the project could be solar chargers with a small gel cell battery ensuring that there is good voltage stability to prevent drift. It is possible to suspend the transmitter and P.S.U. at the centre of a dipole.

References:  
[www.hanssummers.com](http://www.hanssummers.com)

<http://knightsqrss.blogspot.com/2010/01/getting-started-with-qrss.html>

<http://soldersmoke.blogspot.com/search/label/QRSS>

Next issue a description of the Hans Summers QRSS transmitter Kit and Results Obtained.

## **North Cork Radio Group Rally**

The North Cork Radio Group would like to express their sincere thanks to everyone who helped to make their recent rally another resounding success. We thoroughly enjoyed the day and appreciate the support received from you all. There was a great turnout and plenty of bargains on offer.

We look forward to seeing you all again next year."

## **New Lough Erne Amateur Radio Club Committee**

Lough Erne Amateur Radio Club elected a new Committee at its AGM on Wednesday 21st September.

The new Chairman is Tommy Nelson, M1ORVH.

Tommy came into amateur radio via the Club's Foundation course in February 2010, then Intermediate 4 Course in February 2011 and the Advanced exam for a Full Licence in June past.

The Club is proud of this and similar successes by its many new members, and is delighted that that one of them has become its Chairman.

The vice Chairman is Herbie G1JPO, Secretary Michael M15MTC and Treasurer Jamie 210MFB.

The report at the AGM detailed progress and achievements in the past year, in which it had won the UK-Runner-Up Club of the Year Award.

The Silver Anniversary Lough Erne Rally was also reported.

The next Lough Erne Rally is set for a very easily remembered date – Sunday 1 April 2011.

*Michael Clarke M15MTC  
Secretary Lough Erne ARC  
Email [mi5mtc@learc.eu](mailto:mi5mtc@learc.eu)*

## **Tipperary Amateur Radio Group**

The Tipperary Amateur Radio Group due to popular opinion has decided to change their meetings in future to the first Wednesday of the month, in the Raheen House Hotel, Raheen Road, Clonmel at 2030. All are welcome.

# The History of a Callsign: The Halpin Clan and EI4J

By Shane Halpin EI4GE

## EI4J



Fintan Halpin 1915-1955  
Frank Halpin 1912-1972  
Gavin Halpin 1918

experimenting since **1935**

One of the most interesting and perhaps little known anecdotes relating to Irish amateur radio history concerns the call sign EI4J and the Halpin family.

In the summer of 1935 three young brothers Fintan, 20, Frank 23 and Gavin aged 17 were living in their parent's house in Cambridge Road, Rathmines in Dublin 6. The young men had heard of Colonel Meade Dennis experiments in radio communication in Baltinglass and like others at the time felt that they too wanted to partake in this new activity.

Dennis who is believed to have been the first amateur radio operator in the world was one of a handful of radio experimenters in the country at the time, his call sign was EI2B (originally DNX and later GW12B prior to the creation of the Irish Free State).

Dennis was experimenting with spark gap transmission in London, as early as 1898, some five to six years before the Wireless Telegraphy Act was passed in the UK requiring radio stations to be licensed.

Inspired by the O'Dwyer brothers, Donal and Diarmuid in upper Leeson Street, (GW18B and later to become EI8B, Fintan and Gavin built their own transmitter and receiver with parts from the CQ radio shop in Molesworth Street in Dublin.

The transmitter consisted of a 47 Oscillator and two 46s PA and the receiver 1-V-1 Autodyne battery valves.

The radio was attached to a Herty 133 feet end fed zepp antenna fed with open wire feeder, the spacers of which were made I am told using wooden spreaders that were individually boiled and treated to create better insulation!

Gavin remembers building the steel frame to house the early equipment. It had four uprights with wooden shelves to hold the breadboards and valve sockets. The electricity in the house was 240 VDC and the brothers wound their own step-down transformers.

Both Fintan and Gavin dabbled like most experimenters at the time for a number of years and eventually applied to the Department of Post and Telegraphs for permission to experiment using wireless telegraphy in line with the recently passed Wireless Telegraphy Act of 1926.

The radio experimenter licence EI4J was granted to the Halpin brothers in December 1935, Fintan becoming the main operator and Gavin taking out the second operator on the callsign.

Fintan like many young men at the time had contracted TB and had undergone a very tough operation where they removed the rib cage and collapsed the lung. He operated from the families open conservatory where he had access to the fresh air.

Gavin was himself later to contract TB and survive thanks to the introduction of the new antibiotics in the late 40s.

To put this in context, Ireland this was just a mere 9 years after the first broadcasting station 2RN emerged in Ireland. It was a time prior to the outbreak of World War 2 when young men were pushing out the boundaries of their knowledge and understanding of the elec-



Gavin at his tower about 10 years ago

tro-magnetic spectrum.

At the outbreak of war all transmitting stations in the state were required to hand in their equipment to the fledgling free state.

Gavin has recollections of sitting the radio test in Camden Street at the offices of the Post and Telegraphs. There was no theory test in those days just the ability to send and receive CW to 12 words a minute and submit schematic drawings of the planned radio transmitter and receiver for the experiments.

When the time came for Gavin to move out of the family home he moved to Drogheda in 1946 and took out his own individual callsign EI9P in August of the same year.

His new station consisted of a homemade superheterodyne RX (George Grammer model QST edition 1941)) and a 6L6 crystal oscillator TX driving an 807 at about 30 watts input CW.

Fintan continued to operate EI4J up to his early death in 1956 at the young age of 40 with the then incurable TB illness.

The other brother Frank had at this stage also become interested in the radio. Frank

I.R.T.S. **IRISH FREE STATE** A.R.R.L.

TO RADIO \_\_\_\_\_ Ur Sigs wkd ere 1935  
at \_\_\_\_\_ G.M.T.  
B.S.T.

TX. \_\_\_\_\_ QSA \_\_\_\_\_  
RX. \_\_\_\_\_ QRB \_\_\_\_\_  
QRG \_\_\_\_\_ T \_\_\_\_\_

**EI4J**

QRA: "DRAYTON" RATHMINES.  
DUBLIN

Pse. Qsl. \_\_\_\_\_ Vy 73 es fb ds  
Remarks \_\_\_\_\_ op \_\_\_\_\_

**IRELAND**

**EI4J**

TO RADIO \_\_\_\_\_ CONFIRMING \_\_\_\_\_ MC QSO ON \_\_\_\_\_ 19  
AT \_\_\_\_\_ G.M.T. RST \_\_\_\_\_ QSL \_\_\_\_\_

FRANK G. HALPIN, TURRET HOUSE, CRUMLIN, DUBLIN.



had a serious fall of a horse which left him paralysed from the neck down. For him radio was the lifeline to the outside world.

Frank took over the callsign EI4J and set up station at his mother's house in the then rural Inchicore off the Davitt road.

Frank was to become one of the best known amateurs in the country at the time and his large turreted house, since knocked, became the regular haunt of amateurs in the city at the time.

People like the late Syd Farrelly EI9Y, Fr Jim Stone, EI4Q, Louis Robinson EI6Q Joe Driscoll EI7CRB a young garda at the time, to name just a few were regular visitors. Stretched on a wheeled bed, Frank operated the world and had numerous visits from hams around the country and from all over the world.

His homebrew tower and 3 element beam towered over the grounds of the large turreted house in Inchicore.

One of Frank's longest standing relationships was with the late Terry Tierney 5X5FS (EI9G) in Uganda.

Terry, who was a former candidate for the priesthood had gone to Uganda as an engineer and both Frank and Terry looked forward to their regular 20 metre sked. He was often joined on frequency with the late Fr Jim Stone EI4Q among others. He also kept a daily sked with one of his teachers in Douai Benedictine College in England Fr Paul G3BGL.

Frank was active from his QTH in Dublin until 1972 when a fall in his house ultimately led to his death.

Following the death of his brother, Gavin who was licensed as EI9P applied to the Department of Posts and Telegraphs for his original callsign and took ownership of the call EI4J again.

The call was granted in 1972.



Franks radio equipment inherited by Gavin and then Shane.

Collins 75A4 and Heath SB401 donated to the disabled amateur group in Dublin in the 1980's.



Frank gets visit from two US millionaires (circ 1950)

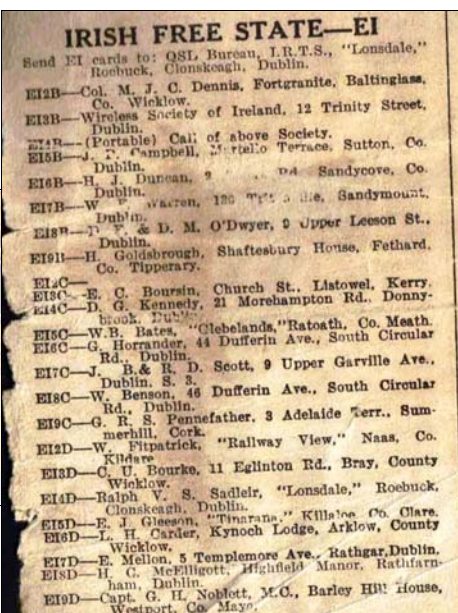
Gavin, aged 93 born in 1918 is the last of the 1935 trio of Halpin brothers - the pioneers in early radio experimentation in Ireland.

But the story doesn't end there, in 1984 Gavin's youngest son Shane was licensed with the callsign EI4GE at the age of 18 following a number of years as second operator on the call EI4J.

Cutting his teeth on his uncle Frank's Collins 75A4 receiver and the Heathkit SB401 transmitter, Shane became the 4<sup>th</sup> Halpin in this unique episode in the history of Amateur Radio in Ireland. He will inherit the call EI4J and maintain the lineage from the earliest days of radio experimentation.

Gavin at 93 with 76 years of experimentation under his belt today is challenged with his sight and battles with macular degeneration.

However, with the used of a CCTV magnifier he is able to read though his monthly edition of QST, IRTS newsletter and continues to listen to the HF bands now on this, his 7<sup>th</sup> sunspot cycle!



Original call book listing for Ireland after independence circ 1930.

## U.S. Ham Population Tops 700,000

For the first time ever, there are more than 700,000 licensed radio amateurs in the United States.

As of September 30, 2011, according to the ARRL and AH0A.org, the total number of FCC amateur licensees was 700,221. This represents a 145 percent increase over the U.S. ham population in 1971, according to the ARRL, and an increase of more than 200,000 in the past 20 years.

After dipping between 2003 and 2007, license numbers have risen steadily for the past four-plus years, passing the 2003 peak of 687,860 in March 2010, according to statistics tracked by Joe Speroni, AH0A.

ARRL VEC Manager Maria Somma, AB1FM, says there are currently approximately 150 ARRL-coordinated exam sessions each week, compared with about 55 per week in the mid-1980s

## DX0DX Donations to be Refunded

Donations made to support the now-cancelled DX0DX expedition to the Spratly Islands will be refunded in full, according to *Newsline*.

In an e-mail to the news service, team leader Chris Dimitrijevic, VK3FY, said he would personally make up any shortfalls between amounts donated and funds on hand in the expedition account.

The long-planned DXpedition was cancelled due to personal safety concerns. Questions may be directed via e-mail to <chris@vk3fy.com>

## Danish Study:

### No Link Between Cell Phones and Cancer

The largest study yet of possible connections between cell phones and cancer has found no evidence of any link.

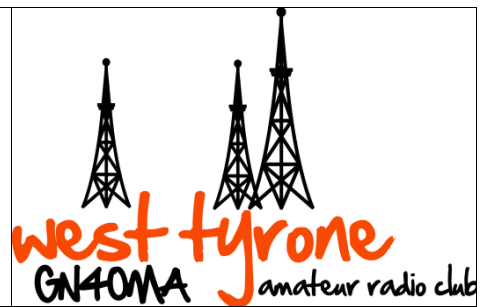
The Associated Press reported in October that the Danish study of more than 350,000 cell phone users monitored over 17 years found there was no increase in cancer risk compared with non-cell phone users.

In the U.S., both the Food and Drug Administration and the FCC have found no evidence of a link.

Fears of a connection persist, however, the story reported, despite the fact that cancer rates have not increased since cell phones were introduced.

# HF • C • N

the northern ireland HF conference



## A report by Frank GI4NKB

Myself and Harold GI4GOS made the trek to Omagh for an occasion that hopefully will become a regular event in the GI summer calendar, the GI HF convention. If any event deserved our support this new venture was it.

Where else could one get personal contest logging software tuition from the author himself and an offer on the day of a keyfile for the software for a £10 donation (that's better than a £10 saving) to the upcoming T32C expedition *and* priority treatment for QSL confirmation if you work 'em?

Where else would you get to rub shoulders with some of the best HF ops in Ireland and the UK and the chance to talk "shop" with them? Or quiz RSGB higher ups straight from RSGB HQ about the National Amateur Radio Centre Project at Bletchley Park?

Where else would you see the author win a years RSGB membership?

But I digress, I'll do a brief "consumers" style review from here on in and it will only be brief because I could literally write pages about this conference if I wanted to!

We got slightly lost in Omagh town centre but a quick call on S22 got us directions to the venue in double quick time, the talk in worked for us blokes from east of the Bann – 10/10

There was lots of car parking space with the potential to use the nearby supermarket if the on site space overflowed – 10/10

We were met at the door by a friendly bunch who upon receipt of the £3 entry fee directed us upstairs for a free cuppa and presented us with a printed sheet of the programme for the day, and what a programme!

12:00 Opening of Conference, followed by:

John Breen EI7BV, "How did Amateurs get their bands: The Early Years & the Bands Below 30MHz"

13:00 Simon Lloyd Hughes GWØNVN, "The shack in a Suitcase"

13:00 Paul O'Kane EI5DI, "Contest logging with SD"

14:00 Michael Clarke MI5MTC, "A Futterer's Fun with QRP Homebrew"

14:00 Malcolm Granville GI8AFS, "HF Beacon Project"

15:00 Carlos Eavis GØAKI, "IOTA"

15:00 Simon Lloyd Hughes GWØNVN, "EMC don't Panic"

16:00 Paul O'Kane EI5DI, "T32C DXpedition to Kiritamiti (Christmas Island)"

17:00 Close of Conference / Conference Raffle

Coffee, tea, sandwiches, scones, biscuits and HOMEMADE (!) soda bread and soup were available in the canteen all day for a very reasonable, almost give away price – 10/10

The venue itself was excellent, it would be hard to imagine a better place to hold a conference, it was modern, bright, airy, clean, the toilets were spotless and water coolers were strategically dotted all around the place. This wasn't your musty venue of yesteryear folks and easily scores 12/10

A quick look at the programme will show that lectures ran simultaneously. Perhaps there's a case here for running future conventions over two days? I attended three full lectures and parts of several others and all without exception were excellent, perhaps though the surprise of the bunch was the one entitled, "How did Amateurs get their bands?" by EI7BV, but I must stress they were all excellent and reflected the not inconsiderable effort the lecturers must have put in to preparing them.

I saved the best for the last and that of course is the West Tyrone Club itself. The welcome we Belfast boys who did make the trip received was outstanding as was the banter throughout the day, big thanks guys. The conference was excellent but you yourselves were the icing on the cake – take a well deserved bow for the hard work you put in to pulling this

event off and for having the courage to try something new. THANK YOU ALL.

## Convention Sponsors:

The RSGB,  
The IRTS,  
Practical Wireless,  
JBT Trading,  
TA Electronics,  
Nacl Engineering Castlederg,  
Icom UK,  
Grainger Communications Ltd, Omagh,  
Waters and Stanton,  
Brae Computers, Omagh,  
Quinns Centra, Omagh,  
Omagh Computer Repair centre.

## Photographs:-

Below: Frank Hunter GI4NKB winners of a years membership of RSGB with the RSGB Regional Manager for GI (Region 8) Peter Lowrie MI5JYK

Top: Picture 1: Door prize winners

Picture 2 : Presenters at the Conference with WTARC Vice Chairman Eddie McCrystal GI7FHZ

Picture 3: Raffle prize winners

Picture 4: Practical Wireless Subscription Winner - Ian Morrow MI1CCU





## AREN assist at Sean Kelly Tour



Sunday August 28th saw approximately 4,300 cyclists take to the roadways around Waterford County covering three different routes.

This year AREN was asked to assist in tracking the "Tail" of the 90k and 160k routes for the purposes of assisting with the logistics of deploying ambulances.

There was approximately 4300 cyclists on Sunday and 1000 on Saturday. On the Sunday there were 4 casualties transported by Irish Red Cross ambulances to hospital, 4 dealt with in the Dungarvan First Aid post, and 28 medical assistances performed.

Once our primary task was complete, as a secondary task we were asked to 'fill-in' any communications black-spots that arose.

AREN was also able to provide a radio communications link to SEMRA which was a bonus as far as the served agency was concerned. VHF communications were operational at 09:05 and HF (80m) operational at 10:25.

Many thanks to Francis, EI5GOB and John, EI7IG for their assistance on the day.



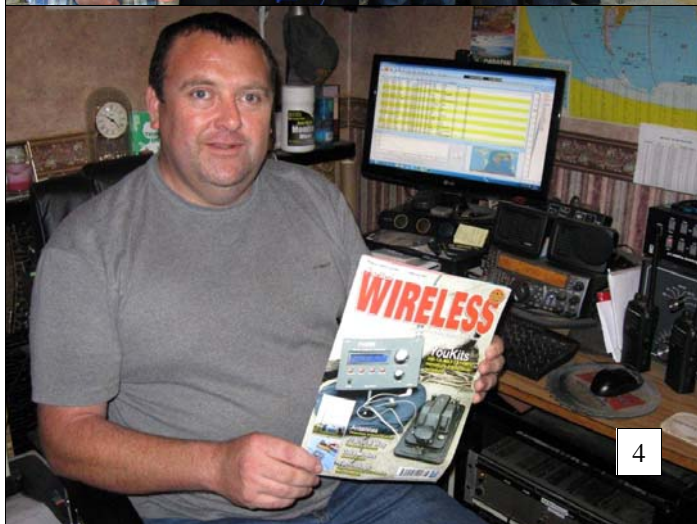
1



2



3



4

## Skerries Radio Club



Pictured at the Skerries Windmill activation were:  
Derek EI7CHB, Michael EI1548, Pat EI2HX, Austin EI3AS



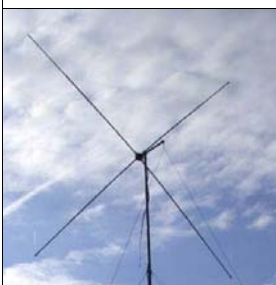
# EJ3Z Inisboffin - IOTA 2011

The Shannon Basin Radio Club once again set off to Inisboffin (EU-121) to participate in the restricted section of the 2011 IOTA contest which took place over the August Bank Holiday weekend.

Fergus EI6IB brought all the "gear" over on the freight ferry on Wednesday 27<sup>th</sup> and started to set up the station in the National School on the island.

Fergus and Tony EI3HA put up the first of the antennas which was an inverted vee. This worked well on all bands and both Fergus and Tony had numerous QSOs using the club call EJ3Z and their own calls using the EJ prefix.

Enda EI2II set up the computer network and provided internet access. The rest of the team arrived on Thursday and Friday and I also used the opportunity to use EI8IU/MM on the ferry on the way over



to the island. Two additional antennas were erected on Friday when the weather was dry and sunny, albeit a bit windy.

These were a five band quad and an 80m vertical. All equipment was thoroughly tested and deemed to be ready for the following days contest start.

The two rigs used were an IC7600 as the main rig and an IC7400 as the secondary rig.

The logging programme used was N1MM which worked perfectly throughout the 24 hour contest.

During the contest we had numerous pile ups both on SSB and CW which proved that the EJ prefix as well as the relatively rare EI IOTAs are still much sought after. We made steady progress throughout the contest and were all very tired and relieved when the final QSO of the contest



was completed on the afternoon of Sunday 31<sup>st</sup> July.

After a break of a few hours for refreshments, I started to use my own call EJ8IU and ended up with a pile up on 40 metres which took several hours to clear.

I also was QRV on the Monday morning and was again kept busy with the result being several hundred QSOs in literally just a few hours.

My one regret was that I didn't have enough time to be QRV as I had to leave on Monday afternoon.

The large antennas were dismantled and everything except the IC7400 and eighty metre vertical were packed for the journey home.

This gave Fergus EJ6IB the chance to be QRV for a bit longer as the freight ferry normally operates on Wednesdays.

He was far from bored as he also had numerous QSOs over the remaining days. I can only recommend that clubs or indeed individual operators try to operate from some offshore island as this was my first time to do so and really enjoyed it.

The fact that the weather was mostly sunny and dry helped of course as Inisboffin has some beautiful scenery, beaches and walks. Not to mention the Guinness!

We must sincerely thank the Board of Management of the National School for letting us use the school and its facilities. Without them we could not have taken part in the contest.

So roll on next year when we will hopefully once again be QRV as EJ3Z with perhaps a bigger team!

Brian EI8IU

## Exhibition Station at Cork Institute of Technology

Cork Radio Club members set up a demonstration station at the CIT campus in Bishopstown, Cork on Tuesday 11 October as part of an initiative to introduce CIT students to amateur radio.

Ingo EI2KF, Tim EI2KA and Gene EI6KF (AL7GQ) operated the club call EI5CRC from the main entrance at CIT from 1100 to 1500.

They didn't make too many radio contacts due to the very noisy location, but did get as far as Toronto and the Ukraine on 15m phone.

Jim EI8GS, Brian EI5HV and Don EI8DJ called in on the Cork Repeater and Aedan EI3EG set up an IRLP connection to Australia

Twenty students signed up for more information and Cork Radio Club will be encouraging and supporting the formation of a club in the College.

Thanks to all that helped and/or called in on the day.

In the end we had great interest from students and staff alike at CIT, with many stopping for a long chat and one lad actually working Don EI8DJ on the Cork Repeater.

Thanks to all who were involved especially Ingo, Tim and Gene and all who called in person or on the air.

We hope that the old callsign at CIT will heard on air in the near future.

## 8J1MORSE

Dear Sir,

I am Tomio Yamazaki, JG2GSY, a member of the 8J1MORSE operating team. On behalf of the team, I really appreciate your publishing the information of 8J1MORSE in the IRTS News Bulletin. However, unfortunately, there is an incorrect description in the DX News in the 05-June-2011 issue of the IRTS News Bulletin.

You mention "The Japan A1 Club ..... 8J1MORSE until the end of 2011." HOWEVER, actually the license of 8J1MORSE is valid until 30th November. Please refer our official website and weblog for the details.  
website: <http://8j1morse.a1tokai.net/>  
weblog: <http://8j1morse.blogspot.com/>

I would appreciate your publishing a correction.

With best regards,  
Tomio Yamazaki / JG2GSY on behalf of the 8J1MORSE operating team.



Pat EI9HX, Niall EI4CF, Brian EI8IU, Fergus EI6IB, Anthony EI6GGB.





# Mayo Radio Experimenters Network



The Mayo Radio Experimenters, using the call sign EI7MRE/P, activated the Blacksod lighthouse, IE0008, which is sited on the north west coast of Mayo, on Sunday August 21<sup>st</sup> for the International Lighthouse/Lightships On The Air event. This was the first time that this lighthouse was activated for the occasion and the first lighthouse the club has activated. Approximately 250 contacts were made into 22 countries and 6 UK and Dutch lighthouses were worked. Best DX was Japan, Indonesia and Philippines. North America was prominent too with limited openings to South America. The bulk of the contacts were with stations in Germany and Italy.

The club used a horizontal doublet antenna for 20, 40 and 80m. A vertical was used for 10, 12 and 15. The station went on the air at 10.30am after a 6.30 am start from Castlebar. The station closed down at 5.30pm and operators were back home by 9.30pm.

A barbecue was busy on the day with local fishermen commenting on the almost continuous meal that the operators enjoyed.

The team included, Jimmy Kelly EI2GCB, Padraic Baynes EI9JA, Dominic Curtin EI9JS, John McAndrew EI3JM, David Hatfield EI3ECB and Shauna Baynes EI1588.

The Blacksod Lighthouse was established in 1886 and converted to electricity in 1967. The height of the light is 13m above Mean High Water Springs.

The August meeting of the club, passed a vote of congratulation to Adrian Healy, EI2HAB, who passed the theory examination at ComReg's offices in July.

Plans are well underway for the 2011 Mayo Rally will be held on Sunday Nov 20<sup>th</sup> in The Welcome Inn Hotel, Castlebar.

The Rally Director is Padraic Baynes, EI9JA.

More details about the club and its events can be found on the web at ei7mre.org

## Mayo Chairperson calls for radio enthusiasts to join their local club.

Jimmy Kelly, EI2GCB, was re-elected Chairperson of the Mayo Radio Experimenters, at their recent AGM. This is Jimmy's third consecutive year, and, under the club rules, he will have to step aside at next year's AGM, because of the three year rule.

Adrian Healy, EI2HAB, was returned as Treasurer and selected for the first time as IRTS Club Rep.

The other officers elected were: Newsletter Editor – John Corless, EI7IQ, PRO – David Hatfield, EI3ECB, Rally Director – Padraic Baynes, EI9JA, QSL Manager – Brendan Minish, EI6IZ.

Addressing the meeting, the Chairperson Jimmy Kelly, EI2GCB, said the club continues to have a strong and vibrant membership with well attended monthly meetings and is financially solid.

He congratulated Adrian Healy on his success in the July theory examination. He said that everyone interested in the hobby should join their local club; the availability of theory classes being one of the many benefits of membership.

The club performs well in contests, he said, including winning the portable section of the IRTS 80m Counties Contest. He noted that MREN took part in the Lighthouses on the Air event for the first time this year, which proved a very enjoyable event.



## Wishing Well Shield

Padraic Baynes, EI9JA, (left) receives the Wishing Well Shield from Adrian Healy, EI2HAB.

## The Conor Shield

The Conor Shield is presented to joint winners Dominic Curtin, EI9JS (left) and Jimmy Kelly, EI2GCB, (right) by Adrian Healy, EI2HAB

He added that the club was delighted to support the scouting event, JOTA, again this year. He thanked members who called in to the club callsign, EIMRE/P, which is used in these events.

The club organised a number of publicity and promotion events over the summer on an experimental basis. These were public events and he reported limited success, adding that while they were very worthwhile endeavors, the events themselves would need tweaking for next year. The chairperson reminded the meeting that the Rally would be held on November 20<sup>th</sup> this year at its now established venue of The Welcome Inn Hotel in Castlebar. He thanked the management and staff of the hotel for their continued support of the club.

Jimmy also congratulated John Browne, EI7FAB, winner of the MREN annual activity, with half a point margin over Dominic Curtin, EI9JS, in the closest-run club event ever. The annual activity is decided by a cumulative tally of scores recorded in the twelve monthly competitions held by the club for its members. Jimmy added that the club published twelve newsletters again this year and transmitted the IRTS and local news every Sunday evening at 2100 local time simultaneously on four bands – 2m, 4m, 6m, and 70cms. The 2m news is transmitted via the Mayo Repeater, which the club maintains.

Jimmy also thanked John Walsh, EI5GHB, for his great work on the club website.

He concluded his report by thanking his fellow officers and all the members for their attendance at club meetings and events and their support over the year past.

The Connor Shield (for outstanding service to hobby,) was won jointly by Jimmy Kelly, EI2GCB and Dominic Curtin, EI9JS and the Wishing Well Shield (for outstanding service to the club) was won by Padraic Baynes, EI9JA.



## My Magnetic Loop Experiences - Part 3

By Jack O'Connell EI7HO

### Design and fabrication of the rotator.

As mentioned before, this had to be a "silent mode" ultra-low profile unit. This was discussed at length with '6AK and '2GO and the result was 6AK produced exactly the drive motor I was looking for and which I eventually used, from his junk box.

This is a 24v unit, similar to a car/truck wiper motor, with the addition of an external gear drive and mounting plate for some unknown industrial application.

This gear had a nice flat surface and the end of the shaft was already drilled and tapped so it had possibilities.

I originally thought I would remove this gear and fit a pulley instead. However, I found a section of 25mm diameter nylon approximately 30 mm long with a small hole drilled in centre. I opted to drill this out to take a 4mm bolt and bolted it to the end of the shaft and seated it on the flat face of the existing gear, drive pulley solved!!!

In the meantime I was visiting the local Army Surplus Store looking for some odds and ends and came across an up-ended castor which had a 150mm wheel and a square fixing plate.

The wheel was approximately 50mm. wide at the axle. It was a little expensive at €16 but having had a think about it I returned and purchased it.

The wheel was removed and the loop support, minus the loop, was bolted in place using the axle bolt and nut. The castor plate was bolted to a semi-circle of 15mm chipboard left over from the shack refit needed when I moved in here.

As can be seen in the photo it is a semi circle which has a radius of 235mm plus an extra 70mm which is half the width of the castor mount. This allows a few degrees more than 180 degs. at each end of travel (360degs. travel could also be arranged using this drive arrangement).

I now had a support post which could rotate on a ball bearing mount, the basis of the rotator. I decided to use the old loop base which is 400mm by 400mm of 9mm

MDF as the base plate. I inserted a packing piece of chipboard 205mm by 205mm by 15mm as a spacer between the base and the semi-circular section, to give the drive pulley clearance over the base plate when rotating, and all screwed together made a sturdy base.

Another section of 50 mm x 50 mm was fitted to the castor at a 90 deg. angle to the base of the vertical post to take the motor mount. The axle fixing plates opened out when the bolt was removed and this allowed space for 9mm MDF gusset plates to reinforce the angle joint. These were glued and screwed in place for extra strength.

A suitable mounting bracket was fabricated from spare pieces of 12mm MDF and the drive motor added. Having lined up the drive pulley with the semi-circle I connected the motor to the bench power supply and used a round file to cut a groove in the nylon approximately in line with the centre of the chipboard's



Castor minus wheel



Castor minus brake

semi-circular edge. I then attached a nylon cord to one corner of the semi-circle, wrapped one turn around the nylon pulley and attached the cord to the other end of the semi-circle, making sure there was enough tension in the cord to grip the drive pulley with enough friction to drive the system.

Connect the 12v supply and Boy!! Watch that baby go Hi, it needs slowing down but it sure works a treat. I needed a variable voltage source. Happily, Jim '8GS was in on the discussion on Skype next evening.



Reversing Switch

When we met at the Cork Radio Club's first meeting in Carrigrohilly Jim arrived with a neat 12 volt variable supply under his arm, thanks Jim. Using this supply at about 6v. I had it turning



Completed loop in temporary position in attic

sweetly, at a nice pace and not a sound worth talking about !!!

Next, the loop was attached and we were in business. Switch on the radio and check for signals, This temporary set-up was tried for a couple of weeks, in various positions and at different times all with varied degrees of success.

Rotating also seemed to tweak signals and the signal to noise ratio could also be improved. It was back to the bedroom for more testing, especially the rotator. Time to try the loop with the 1000-pf. vacuum capacitor fitted and to sort out some system of stopping the rotator before moving it to the attic.

This testing also demonstrated a limitation with the rotator. If the desired station was found at one end of travel point then you could have to rotate the loop all the way round to the opposite end of travel to tune it to peak signal strength. This might lead to a future mod if the rest of the project setup proves successful. I would also increase the radius of the semi-circle if I had more space in the attic but unfortunately not possible in the present situation. An increase in radius would allow a bigger variation in rotor speed.

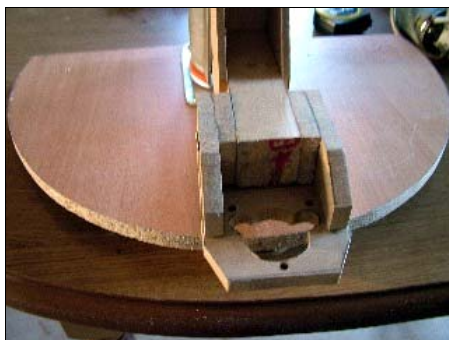
(Continued on page 21)



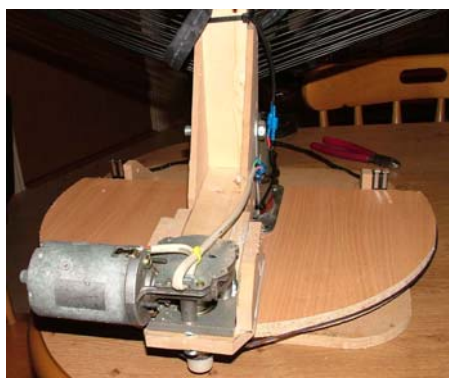
(Continued from page 20)

With the present setup the difference in the rate of speed increase to voltage increase is too great, a more gentle rate of increase would allow quicker rotation but not quick enough to derail the cord drive. Another improvement I would include is a groove cut around the outer face of the semi circle to keep the cord centralized. I've a good deal of further testing, mostly on PSK31 on 40m and 20m and had QSOs with European and American stations but with the present conditions being so variable it really is a waste of time but I am looking forward to an improvement, if we ever get one, to give it a thorough testing.

If it ever happens I will attempt to report back, in the meantime, 73 for now and good DXing.  
Jack EI7HO.



Web Rotator base and MDF motor mount.

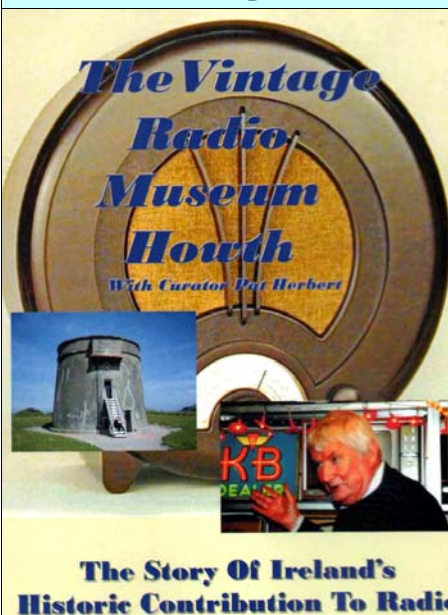


Completed Rotator Drive



Drive motor and gear

## Vintage Radio Museum DVD



### The Vintage Radio Museum - Howth

Pat Herbert is the curator of the Vintage Radio Museum in Howth and is the foremost authority on the history of radio in Ireland. Over the past 50 years he has assembled a collection of hundreds of radio receivers dating back to the birth of radio. Along with vintage Televisions, Microphones Phonographs and memorabilia ranging from the beautiful to the bizarre this collection has been brought together at The Vintage Radio Museum in Howth which is housed in the historic Martello Tower overlooking the picturesque harbour. In this DVD Pat brings you on a tour of the museum and tells the story's behind many of its most important exhibits and the building itself which played a pivotal role in the development of radio.

Running Time: 52mins



PRODUCED BY OKLY MEDIA PRODUCTIONS  
TEL: +353 86 2730 985 OR +353 86 880 3717

DVD © OKLY MEDIA PRODUCTIONS 2011

A 52 minute DVD video of the Vintage Radio Museum in Howth is now available. The price is €14.99 including P&P (Ireland) and can be ordered by email from [info@ei0mar.org](mailto:info@ei0mar.org) or from EI5EM @ QTHR, telephone 01-8482723.



## Mid Ulster Amateur Radio Club

[www.muarc.com](http://www.muarc.com)  
[cqmuarc@gmail.com](mailto:cqmuarc@gmail.com)

With the appointment of the 2011/12 committee under the chairmanship of Martin, MI0YMF, the Mid Ulster Club have again committed to a busy schedule promoting amateur radio through education and awareness.

A Foundation License course was scheduled for Portadown, over the Friday evening of the 28<sup>th</sup> and Saturday 29<sup>th</sup> October and a further Foundation course is planned for the end of November with the traditional Intermediate course penciled in for 12 Wednesday evenings from January through to March 2012.

Registration details and forms are all as listed on the Club's website, [www.muarc.com](http://www.muarc.com)

All courses are open to non members with a special welcome extended to existing MI6 operators wishing to upgrade to 2I0. All course candidates will have the opportunity to benefit from the successful teaching programme and to enjoy the traditional Mid Ulster Club's hospitality.

Brian Burns, MI0TGO  
Club Secretary, Mid Ulster Amateur Radio Club  
email, [muarc.secretary@yahoo.co.uk](mailto:muarc.secretary@yahoo.co.uk)

## Irish Radio Transmitters Society 80m Counties Contest

**Monday January 2nd 2012**  
**1400 - 1700**



## Excerpts from the HX files

### A Look at ATV with Pat Fitzpatrick EI2HX - Excerpt 017

Last time in the HX Files, I mentioned about building the opposite of what was built, (23cms Rx and 10GHz Tx), This time it would be 10GHz Rx, and 23cms Tx.

You can see in photo 1 the setup, with the 23cms Tx on the right and surprise surprise, the 10 GHz Rx on the left. The 10 GHz Rx is a modified LNB, not the normal Sky type but one that is finished in wave guide. The aerials used were the same as the other unit, a slot for 23cms and a Horn type for 10GHz. The unit for the time being would be finished with N type fittings and I would use some adapters like the last time so I could use different types of aerials. I know that using any adapters would cause some power loss but I was not worried by this as I was not making a DX Beacon. I was only going to use it from the bottom of my garden which is around 17m long. The aerial for the 1.2GHz is a dummy load that can be seen in photo 2; I found that this aerial was good enough to do the job of reaching me. This Tx/Rx would be easy (ish) to build in the small box like the last one, but unlike it, this unit would not be the handy portable or demo unit as the kit would also involve an analogue satellite Rx.

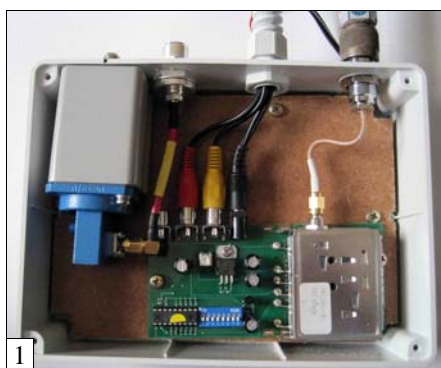
So the signal would be picked up by the Rx aerial first and then via the transition to the LNB, then down to the Sat Rx and then back up to the 23cms Tx. The cables used would be some coaxial cable from the LNB to the Sat Rx and from the Sat Rx the audio and video would be sent up some phono leads to the 23cms Tx and a DC lead for the Tx.

The marking out and drilling of the box would not be too much of a struggle as the holes I needed were near to the sizes I had drill bits for and would only involve having to do a minimal amount of filing but running the risk of oval holes.

I don't have a large enough reamer for the job but the files would do as long as I took my time as the box was very easy to file and the holes could get bigger all too quickly. Oops.

I made a chassis template from a cereal box first and then I transferred it on to a piece of clear Perspex and then drilled out the holes and filed the corners for a better fit.

On drilling the second last hole in the Perspex it cracked and snapped in two and that was followed by words like gosh



darn and blast which could be heard coming from the machine shop (the kitchen). I had no more of the Perspex so I used some hardboard instead as this chassis would only be for testing and would not be a permanent solution. The hardboard would attract moisture and not only fall apart but short out the equipment as I did not use big spacers and if the chassis did warp it would short out the Tx board and that would not be a good thing.

When I was marking out the box I was wondering how to install the LNB. I noticed that the F connector was at the back of the LNB and that its retaining nut was on the outside, which meant the nut could be used to hold the LNB firmly to the project box.

Using the waveguide to SMA adapter and an SMA to N type that was chassis mounted would hold the other end and as you may have noticed in photo 3, the F and N terminals are close together.

#### Some UHF QSO's.

I had a few SSB contacts on 1.2GHz; yes I took some time away from ATV (What!!!). I went /P with Dundalk Amateur Radio Society (EI7DAR) who took part in the VHF/UHF Field day that took place on the weekend of the 2<sup>nd</sup> and 3<sup>rd</sup> of July.

For the 1.2 GHz part of the field day, EI7DAR/P was manned by myself and Mark EI9FX and we were using an Icom 910 (2m, 70cms and 23cms) and a 35 element Tonna.

Most of the contacts on 23cms were on the Saturday, and we only heard the same stations again on the Sunday.

Other members of EI7DAR were on 6m, 4m and 2m. The 2m crew scored well, they used the callsign EI0W/P, anyway enough of that mode.

#### Friedrichshafen Rally.

The rally was a good one, although the stalls were down, the stuff was there and even if you are a youngster (a pup) or a senior citizen (a grave dodger) you could have bought everything from a microphone to an aerial and all in-between. At the rally I purchased a few goodies for 23cms and 10 GHz. The biggest was a 60 watt amp for 23cms and a 2 watt amp to act as a driver for the 60 watt.

The QRO amp uses 28 volts+/-, so a 24 volt PSU was also purchased and the one I bought had a adjustment pot fitted to the front, and under test the no load voltage was 27.8 volts and under load (a couple of 12 volt car headlight bulbs in series) dropped this to 27.5 volts and this was well within the amps parameters so I should be getting very close to full power when driven by the 2 watts.

I will have to dig deep into the stock piles to look for a suitable project box.

I hope to have the unit built soon and have it in the HX files in a couple of issues time if all goes to plan.

The plan is to build it primarily as a base unit but I could use it /p. even if the main power for the transceiver is 24 volts, I would use an inverter to convert the DC power up to mains voltage, or you could purchase one of the small Lidl/Aldi generators.

That is it for this issue of Echo Ireland, see you next time and may all your reports be 5 and 9.

73 de Pat



# South Dublin Radio Club Field Day on Howth Head

On Saturday 16th of July South Dublin Radio headed northside and set up a portable station on Howth Head. Two HF antennas, one VHF and two Amateur Television antennas were erected with power supplied by a portable generator. The club's tent was erected and the clubs rigs were put to good use.

A fibreglass extra large type fishing pole was used as the main mast with the base of this mast held firm with specialised 'ladder feeder'.

Morse, voice and television were the modes in use, with High Frequency, 2 Metres, 23 Centimetres and 13 Centimetres the bands in use.

Some members of the South Dublin Radio club also took the opportunity to visit the nearby "Ye Olde Hurdy Gurdy Museum of Vintage Radio"

After a great welcome members were given a guided tour of the museum by Pat the curator.

Comparison was performed between a carolina windom and a V multiband aerial.

The weather conditions on the day were perfect with a risk of sunburn.

The event was well attended with visitors from North Dublin Radio Club.

It is hoped to continue the practice with the callsign EI2SDR/P on air again.



## North Cork Radio Group Marconi Day 2012

The North Cork Radio Group are extremely pleased to announce that they will, once again, be operating from the Mizen Head Visitors Centre for Marconi Day 2012.

We hope to have another successful weekend of contacts and look forward to speaking to you all on air. Further details will be available in due course."

## South Dublin Radio Club

### ATV Demonstration

At the first meeting in October, members of South Dublin Radio Club and visitors were treated to a demonstration and presentation on satellite television. Daniel EI9FHB, along with Charlie EI2EM, showed how equipment originally designed for broadcast satellite television reception can easily be adapted for use in Amateur Television experiments. Daniel spoke also about the current and planned ATV repeaters.

For those more used to operating on HF, using 40 metre dipoles or Yagi arrays, the diminutive antennas used for 10 Gigahertz Amateur Television were quite remarkable.

### New ATV Repeater

At a recent meeting of South Dublin Radio Club, Daniel EI9FHB gave a talk on the plans for an ATV repeater to be located at a site in the Dublin Mountains. Daniel described the components to be used in the forthcoming repeater and also suggested a number of sources of equipment

suitable for reception of ATV signals. The new ATV repeater will be on the 13 cms band (around 2.4 MHz). It is hoped that the repeater will provide coverage for much of Dublin city and surrounding areas.

South Dublin Radio Club meets every Tuesday between 2000 - 2200 at the Ballyroan Community Centre on Marian Road, Rathfarnham, Dublin 14. The 15B bus stops nearby and the venue has plenty parking. New members and visitors are always very welcome.

[www.southdublinradioclub.ie](http://www.southdublinradioclub.ie)

### Echo Ireland input to:

**Dave Moore EI4BZ, Dooneen, Carrigtwohill, Co. Cork**  
**[ei4bz@eircom.net](mailto:ei4bz@eircom.net)**



# Contest Corner

by IRTS Contest Manager Thos Caffrey EI2JD

## SSB Field Day September 3/4th 2011

### Shannon Basin Radio Club EI2Z/P

Shannonbasin radio club operated from Garbally in Ballinasloe using the call-sign EI3Z/p and on low power.

They set-up on Saturday using a inverted Zepp and a MFJ turner to cover all bands. The rig used was an Icom 7600 (EI9HX) and they used SD software.

All worked well. Conditions were poor at times, and their overall score was down on other years.

There was a good turn-out of club members, with a few from the Galway club turning up to lend a hand.

20m was their best band with only a few contacts made on 10 and 15m.

All in all a great weekend and the club members are looking forward to next year.

Photos are on the web-site

[www.shannonbasinradioclub.com](http://www.shannonbasinradioclub.com)

### EI2KA/P in West Cork

Ingo EI2KF and Tim EI2KA operated EI2KA/P from Tim's seaside QTH at Baltimore in West Cork.

Everything worked well except for the antenna. It was great on receiving but many couldn't hear them.

A few days before Tim tested a random wire taped to a 8m fishing pole strapped vertically to a support 2m from the sea, but it would not tune up.

That idea was abandoned and Tim made up an NB6Zep Jr. 'modified 20m double Zepp' (<http://www.dxzone.com/cgi-bin/dir/jump2.cgi?ID=7483>) which sounded perfect since it would tune on 40-20-15-10.

It tuned up no problem but he had great problems getting out. Lack of height may have been the problem since you are limited to two elevated support points. The third was a gorse bush.

Both Tim and Ingo thoroughly enjoyed the event.

### Tipperary ARC EI7T/P

EI7T/P was aired in from a field in Mooncoin, Co. Kilkenny by Paul EI3ENB and John EI7IG.

Their plan A antenna gave up after about

## Results: VHF-UHF Field Day 2011

	Call Sign	QSO's	Points
Open Section	EI9E/P	876	460,090
	Network Southern Area Radio Experimenters Club		
Restricted Section			
50	No Entry		
70	No Entry		
144	EI0W/P	170	48,854
	Dundalk Amateur Radio Society		
	EI7T/P	17	5,753
	Tipperary Amateur Radio Group		
432	No Entry		
1296	EI7DAR/P	3	986
	Dundalk Amateur Radio Society		

4 contacts, so lots of time was then wasted trying to figure out what was wrong.

They decided to just go to 80m for night time. After a few issues with a plan B antenna. John confidently suggested that they use his 80m dipole that he keeps in the go-kit with associated length of RG-58.

Lo and behold, no length of RG-58 was to be found! So they ended up using LMR-400 and supporting the centre of the dipole on a fibre glass pole. Eventually two lengths of Coax were identified as causing much of the intermittent issues during the early part of the day.

yfktest (<http://fkurz.net/ham/yfktest.html>) on Linux was used as the logging software, with hamlib ([http://sourceforge.net/apps/mediawiki/hamlib/index.php?title=Main\\_Page](http://sourceforge.net/apps/mediawiki/hamlib/index.php?title=Main_Page)) allowing for computer control of the radio (mainly allows the software to automatically follow band/frequency changes)

Final claimed score of 62,700 points, with 259 QSOs.

### Cork Radio Club

Jeremy EI5GM and Dave EI9FBB operated EI1C/P from the Old Head of Kin-sale.

They found conditions very mixed and as with other stations 20m was the main band during daylight hours.

## CW Field Day 2011

There were only two entries in this years CW Field Day.

Jeremy EI5GM/P operated in the open section and ended up with 3,140 points while Jim EI4HH/P made 144,232 points in the restricted section.

## CQWW SSB Contest

Conditions for the CQWW SSB contest over the recent long week were absolutely magnificent and most EI records were probably broken.

Huge scores are reported and it looks like quite a few of the EI records were broken.

We hear that big scores were made by multi operator stations in East Cork and Wexford.

Congratulations to all involved.

The CW leg of the CQWW will be held over the last weekend this month and we can only hope that conditions are as good again.

Have a look at the EI records on page 31 and have a go at breaking one of them or even setting one that's currently not claimed.

We look forward to high activity in the 80m Counties Contest on bank holiday Monday, January 2nd.

*Thos EI2JD*



## CQWW CW 2010 - EI Results

Call	Band	Score	QSO	Zones	Countries	
<b>Multi-Op Single Transmitter</b>						
<b>EI8JX</b>	A	777,168	1320	70	266	
<b>Unassisted</b>						
<b>EI5DI</b>	7	<b>558,363</b>	<b>2222</b>	<b>33</b>	<b>106</b>	<b>New EI Record</b>
<b>*EI4HQ</b>	A	300,720	683	69	211	
<b>*EI7JK</b>	A	107,172	426	34	122	
<b>*EI4CF</b>	28	15,067	209	13	48	
<b>Assisted</b>						
<b>EI6IZ</b>	A	<b>2,477,115</b>	<b>2646</b>	<b>115</b>	<b>416</b>	<b>New EI Record</b>
<b>EI6FR</b>	14	<b>381,150</b>	<b>1406</b>	<b>32</b>	<b>118</b>	<b>New EI Record</b>
<b>EI2CN</b>	1.8	<b>181,968</b>	<b>1174</b>	<b>22</b>	<b>80</b>	<b>New EI Record</b>
<b>*EI7CC</b>	A	247,552	560	63	193	
<b>*EI2KC</b>	A	219,072	539	50	174	
<b>*EIØW</b>	14	<b>333,710</b>	<b>1310</b>	<b>34</b>	<b>117</b>	<b>New EI Record</b>
(OP: EI7KD)						
<b>*EI9KC</b>	7	21,870	168	14	67	<b>New EI Record</b>
<b>*EI9ES</b>	3.5	2,100	54	7	28	
<b>*EI2JD</b>	1.8	5,832	83	9	45	<b>New EI Record</b>
<b>QRP</b>						
<b>EI8FH</b>	A	<b>330,792</b>	<b>741</b>	<b>56</b>	<b>208</b>	<b>New EI Record</b>
<b>EI4II</b>	A	39,900	222	30	110	
<b>Senegal Assisted</b>						
<b>*6V7Y</b>	7	565,277	1627	28	99	
(OP: EI6DX)						
* Donates Low Power						
Bold = Cert Winners						

## IRTS 80m Counties June 2011

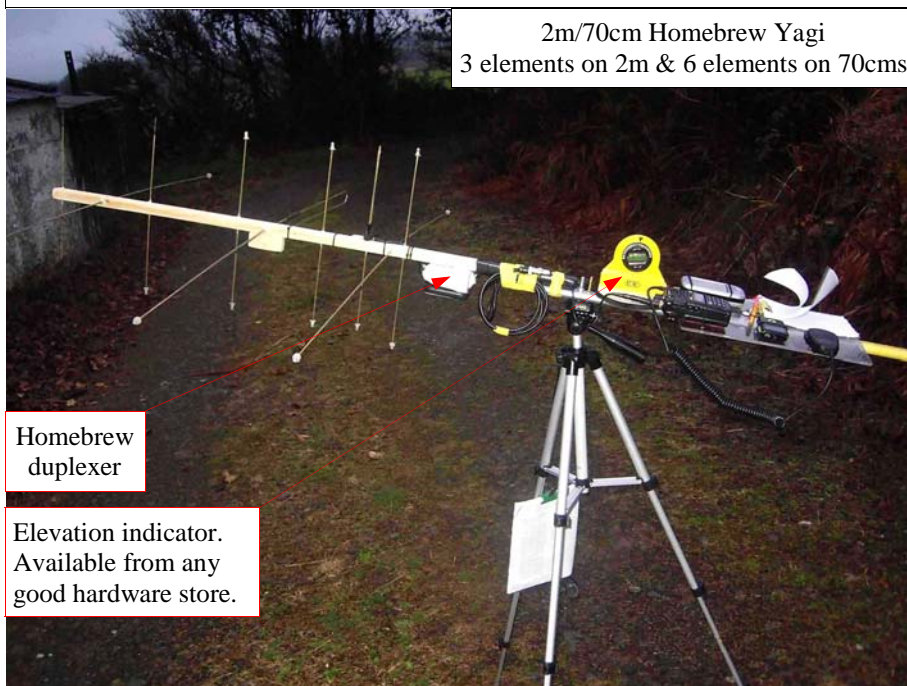
	Call Sign	Points	Valid QSO's	Counties	QTH	
<b>a) SSB only Fixed</b>						
<b>*EI*</b>	<b>EI6JK, Mark Condon</b>		1288	26	14	ROS
<b>*OEI*</b>	<b>MN0RCF, Lough Erne ARC</b>		1176	24	14	FER
	EI2KA, Tim McKnight		728	14	13	COR
	EI7CC, Peter Ball		696	16	12	DUB
	GI4SZW, Seamus Keenan		490	13	10	ARM
	EI3FEB, Andrew McCormack		440	11	10	GAL
	M0TDE, Nigel Knapton		144	6	6	
<b>b) SSB only Portable</b>						
<b>*EI*</b>	<b>EI7MRE/P, Mayo REN</b>		1232	23	14	MAY
	EI3ENB/P, Paul Norris		832	16	13	KLK
<b>c) SSB / CW Fixed</b>						
<b>*EI*</b>	<b>EI2JD, Thos Caffrey</b>		1875	41	15	LOU
	GI4SRQ, George McHugh		1664	29	16	ARM
	GI4BQI, W J McCullough		693	18	11	ARM
<b>d) SSB / CW Portable</b>						
<b>*EI*</b>	<b>EI7GY/P, Joe Ryan</b>		1512	30	14	OFF
	EI7KD/P, Oleg Solovyov		1120	23	14	DUB
<b>e) SWL</b>						
<b>*EI*</b>	<b>EI1588, Shauna Baynes</b>		288	9	8	MAY

**EI\* = Award Winner : Leading EI Station**

**\*OEI\* = Award Winner : Leading station outside EI**

## Portable satellite set-up at EI8GGB

2m/70cm Homebrew Yagi  
3 elements on 2m & 6 elements on 70cms



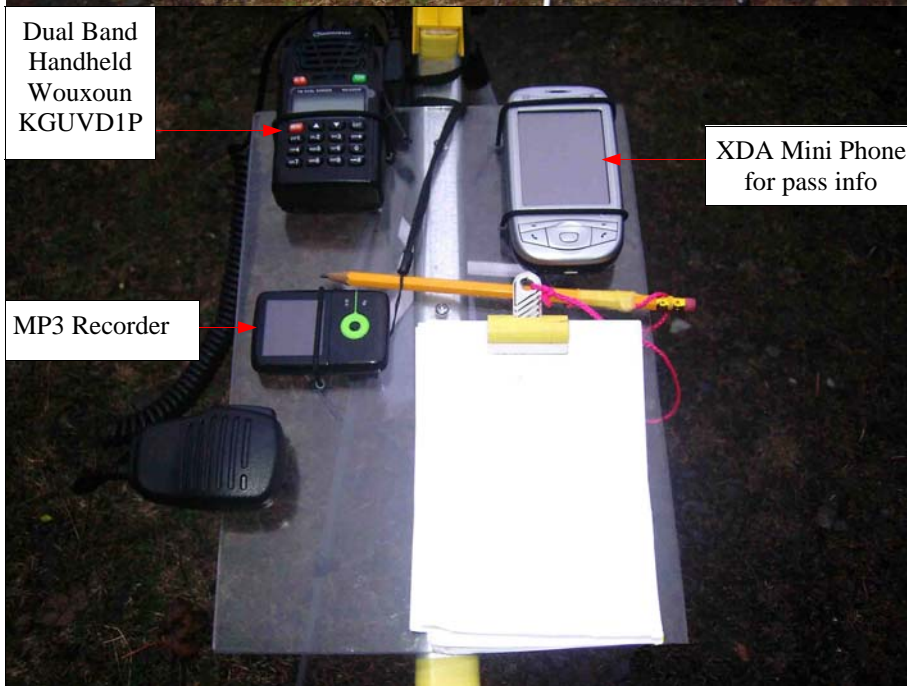
Homebrew  
duplexer

Elevation indicator.  
Available from any  
good hardware store.

Dual Band  
Handheld  
Wouxun  
KGUVDP1P

XDA Mini Phone  
for pass info

MP3 Recorder



## EIs in Lesotho



7P8CC, 7P8BP and 7P8PB at 8CCs QTH in Maseru, Kingdom of Lesotho

## Billy Williams, N4UF, retires as CQ DX Awards Manager

**Keith Gilbertson, K0KG**, of Rochert, Minnesota, has been named the new CQ DX Awards Manager, effective immediately, it was announced today by CQ magazine Editor Rich Moseson, W2VU.

Gilbertson's appointment follows the retirement of **Billy Williams, N4UF**, after more than three decades of service to the amateur radio DXing community. Williams took over administration of the CQ DX Awards program in 1979, when the number of SSB awards issued was in the mid-600s and the number of CW awards was in the mid-300s. Today, over 2,500 SSB awards have been issued as well as more than 1,100 CW certificates.

In addition, the intervening years have seen the introduction of the CQ DX RTTY award and Honor Roll, the CQ DX Field Award program and the CQ iDX Award program.

Gilbertson has been a licensed ham since 1970, and a shortwave listener (WPE0BHO) before that. His addiction to DXing came early!

He holds CQ DX Awards for both CW and SSB and is on the Honor Roll for both modes. Additional DXing awards include CQ's WPX Award of Excellence and 5-band Worked All Zones, along with ARRL's DXCC Honor Roll, 5-band DXCC and the DXCC Challenge, as well as the YASME Award.

Keith has also been elected to the A-1 Operators' Club and is an active island chaser, holding the IOTA-400 award and closing in on 500.

A retired vocational/technical education teacher and community college administrator, Keith is a veteran of the U.S. Air Force and Air Force Reserve.

He lives in Rochert, Minnesota, with his wife, Jeannie. They have two adult children and four grandchildren.

Effective immediately, any correspondence relating to the CQ DX Award program should be directed to:

Keith Gilbertson, K0KG,  
21688 Sandy Beach Lane,  
Rochert,  
MN 56578-9604.  
USA

Keith may be reached by e-mail at keith.gilbertson@q.com.



# Rathlin Island – IOTA Contest 2011

John Crawford-Baker

GIØHWO/GI8IZB/EI7JO

Rathlin is a small island situated 6 miles from Ballycastle on the north Antrim coast. It has three lighthouses, the West Light (Bull Point). The South Light (Rue Point) and the East Light (Altacarry Head).

We had obtained permission from the CIL to operate from the East Light. Fortunately, there is a cottage on the site which is used by maintenance teams and this was home for our 6 night stay. Operating was carried out from one of two old lighthouse keepers' houses about 50 yards away. Sadly these are in a bad state of repair but suitable for our purpose.

The team consisted of Declan EI9HQ, Peter EI4GZB, Pete GI4VIV and myself. We were joined by Rory EI7DJB on the Friday before the contest. After an uneventful journey we arrived on the island early on Monday evening and got ourselves sorted out domestically.

The first aerial to go up on Tuesday morning was the 80 metre ¼ wave vertical. Declan has a very clever way of getting this up and it was soon swaying gently in the light breeze.

Declan and Peter then set to work on the first beam, a three element tri-band which was for the "run" station. This was mounted on the roof of the two houses.

As Pete and I "don't do heights" we started setting up inside and soon had the multiplier station up and running.

This was an FT-1000 MkV and a 2KW automatic linear amplifier plus all the bits & pieces that go along with it.

The "run" station was an FT-1000MP also using a 2KW linear but this was the manual version. The stations used the N1MM logging program on laptops and were networked together.

DX Cluster was achieved by using two INQ smart phones as modems and a telnet connection to GB7MBC.

Wednesday morning was again sunny but there was a very strong wind coming in from the North West. Undeterred, we decided to put up the 80/40 metre dipoles. These were hauled up to the viewing platform of the lighthouse and set as inverted "V's".

The 80 metre aerial was soon resonated but the 40 metre was a problem as the angle was not wide enough at the feed point. Unfortunately, to do any work on this aerial, it had to be lowered down, tweaked and then hauled up again. This took some time but eventually we got both aerials "on the button".

We were all bitten to death by the local midge population so much scratching was going on that evening.

Next job was the three element for the multiplier station. This was turned by a rotator at ground level and gave us a few problems at first but finally worked FB.

Thursday morning saw the wind drop and another fine day ensued. The 40 metre vertical was the order of the day. This went up easily using the aforementioned EI9HQ method and at this point everything was looking good. The rest of the day was spent tweaking, testing and generally making the whole set up bomb proof.

To quote Jimmy Saville "as it 'appens Guys & Gals", it wasn't !

On the Friday, Declan and Peter went down to pick up Rory from the ferry and whilst Pete was tinkering with the stations, I decided to take some photographs.

As I walked round the back of the two houses there was a "shock/horror" moment. A herd of cattle had found their way into the field and pulled the 40 metre vertical down. As getting into this field required climbing onto a wall then climbing down a ladder I was unable to ascertain the extent of the damage, I "don't do heights" remember, so all I could do was wait for Declan to return and give him the bad news. As it happened, Declan had spotted the lack of a vertical on his way out and in his normal sanguine way went about sorting it out.

It transpired that the aerial, although bent at an alarming angle was not fractured



and the liberal application of coaxing and a few hefty belts from a large mallet soon had it looking presentable. Up she went again, but this time empty Tesco plastic bags and strips of plastic wrapping found on an old pallet were tied to the guys at strategic points in an attempt to keep the beasts at bay. We also did this on the beam. IT WORKED !

The remainder of the time leading up to the contest was spent doing more tweaking and recording settings for the linears and generally preparing for the "OFF". Within minutes of the contest starting we lost CAT control on the "run" station. We had tested this thoroughly beforehand but the law of sod had it's way. It took nearly 45 minutes to resolve this but unfortunately it manifested itself at various times throughout the 24 hour period and in total we lost nearly three hours operating time. Much effort will be put into sorting this out for next year.

The two Petes looked after the "multiplier" station whilst Declan, Rory and myself operated the "run" station. We had two hour slots during the busy periods and three hour slots during the night.

A lesson learned here was that we need more operators, especially CW ops on the "multi".

Overall, conditions were very poor. As expected 20 metres was the most reliable but 80 metres perked up in the early hours only to die during daylight.

In total we made just over 1,700 contacts and worked 81 Countries. The final score is yet to be worked out. We are not going to win but all being well will be up there somewhere. It was nonetheless an extremely enjoyable week and one we will look forward to repeating next year. Rathlin East Lighthouse is a superb site, the accommodation is great and the weather was very kind to us. Only drawback was those pesky midges.

Why not come and join us next year ?. We all prepare a mean Pot Noodle !



# EI's on EQSL

(as at October 1st 2011)

Updates and enquiries to Thos EI2JD at thoscaffrey@hotmail.com

DXCC Confirmed		54	EI8BLB	Worked All Zones	
233	EI7BA (+2)	52	EI4GMB	40	EI0CZ
191	EI9FBB (+4)	52	EI8H	40	EI4CF
188	EI3IO (+14)	50	EI6AK	40	EI7BA
177	EI4CF	50	EI8JW	40	EI7JN
177	EI7CC (+5)	49	EI/DK2AT (+3)	40	EI9JU (+1)
176	EI2JD (+4)	49	EI1429	40	EI9FBB
170	EI9O (+17)	49	EI2FSB	40	EI9O
165	EI0CZ	47	EI3EBB	39	EI2JD
148	EI9HX	47	EI9GTB (New)	39	EI3IO
147	EI6IZ	44	EI5HV (+5)	39	EI7JZ (+1)
140	EI7JN	43	EI4DIB	39	EI8GS
139	EI1DG (+11)	43	EI7IS	39	EI9HX
132	EI8GS	43	EI9KC	37	EI1DG
131	EI9FVB (+10)	42	EI5IX	37	EI3GYB (+3)
130	EI9JU	41	EI4IR	37	EI7CC (+4)
128	EI6AL (+11)	39	EI1KARG	36	EI2KC
121	EI2KC (+11)	39	EI4HX	36	EI6JK (+5)
117	EI6HB	39	EI6IF	35	EI4GNB
115	EI3GYB	39	EI7GM (+2)	34	EI5IF
114	EI7JK (+2)	38	EI5GB (+10)	34	EI8FH (+2)
109	EI2GLB	37	EI9GWB (+2)	34	EI9FVB
109	EI5IF	36	EI1509 (+9)	33	EI5GM
109	EI8FH	35	EI1571	33	EI6AL (+1)
107	EI0W	34	EI5DD (+2)	32	EI0W
107	EI4BZ	32	EI90GPO	32	EI4BZ
105	EI7DAR	30	EI7CHB	31	EI2GLB
105	EI8IU	29	EI7GZB (+5)	31	EI5GJB
104	EI4GNB (+8)	28	EI4IN	31	EI6IL (+2)
104	EI4GXB	27	EI3GDB	30	EI3HA (New)
103	EI5GM	26	EI3FFB	30	EI4GXB
102	EI6JK	26	EI7IW	28	EI4GMB
102	EI9HQ	25	EI2FS	20	EI7GSB
97	EI5GJB (+1)	24	EI/G4DDL		
96	EI3HA (+1)	24	EI7CSB (+3)	Worked Prefixes	
96	EI6IL (+10)	24	EI8GNB	1,433	EI4CF (+19)
95	EI8IQ (+8)	21	EI8GGB	1,209	EI2JD (+32)
93	EI7JZ (+9)	21	EI9KB (New)	1,093	EI7CC (+45)
88	EI5GSB (+3)			1,074	EI9JU (+192)
87	EI4HQ	Worked All States		1,073	EI9FBB (+29)
87	EI7IX (+4)	50	EI2JD (+1)	1,070	EI6JK (+87)
86	EI2II	50	EI4CF	1,056	EI8GS (+99)
86	EI4HH	50	EI8GS	1,014	EI0W (+16)
86	EI5GUB	50	EI9FBB	961	EI0CZ (+53)
86	EI9ES	50	EI9HX	949	EI7JN (+108)
78	EI7GSB (+5)	50	EI9JU	904	EI3IO (+14)
76	EI8JR	50	EI9O	885	EI9HQ (+23)
74	EI8DL	49	EI1DG (+2)	849	EI4GXB (+24)
73	EI8HL (+2)	49	EI7JN	807	EI7BA (+22)
71	EI3IS	49	EI9HQ	759	EI7JK (+61)
71	EI7BFB (+4)	48	EI4GXB (+8)	695	EI1DG (+69)
71	EI9CF	48	EI6HB	675	EI9FVB (+31)
69	EI8GP	48	EI6JK (+16)	660	EI2KC (+95)
69	EI9EW (+2)	47	EI3IO	654	EI4BZ (+18)
68	EI/DH0GSU/p	46	EI0W	604	EI4GNB (+50)
68	EI8JB	45	EI0CZ	581	EI2GLB (+106)
67	EI5EV (+3)	45	EI4BZ	579	EI8FH (+68)
66	EI7IM	45	EI4IS	578	EI9O (+39)
65	EI7M	45	EI5GM	569	EI5IF (+37)
65	EI8DD	45	EI7BA	560	EI5GM (+13)
64	EI9FV	45	EI8GP	515	EI2II (+41)
63	EI6ARB (+2)	41	EI4GNB	512	EI8JB (+74)
62	EI3JB	41	EI5IF	497	EI5GJB (+52)
61	EI4IS	40	EI7CC	467	EI7GSB (+42)
61	EI9JM	40	EI9HW	447	EI8IU (+31)
58	EI3KE (+10)	37	EI2KC	422	EI9JM (+12)
58	EI9JF	34	EI7GSB	408	EI8IQ (+113)
57	EI4KE (+3)	31	EI4GMB	394	EI8GP (+2)
57	EI8JK	30	EI9ES	386	EI9KC (New)
56	EI7BMB	29	EI9FVB	385	EI5GSB (+30)
55	EI5HE	26	EI6AL	363	EI3HA (+9)
55	EI6CPB	26	EI9JM	361	EI7JZ (+51)
55	EI6GGB (+1)	22	EI6IL (+4)	333	EI/DK2AT (N)
54	EI7IQ			291	EI7IX (New)

# EI DXCC Listings

(as at October 23rd 2011)

DXCC Challenge		225	EI9JF	116	EI4BZ
2,649	EI7BA (+227)	213	EI7GL	102	EI2JD (New)
1,914	EI9FBB	200	EI6IL	100	EI8IU (New)
1,798	EI3IO	188	EI2CH		
1,610	EI7CC (+41)	186	EI7II	20m	
1,522	EI6FR	185	EI4BZ	334	EI7BA (+13)
1,504	EI2JD (+369)	177	EI9FE	306	EI6FR
1,173	EI6IZ (+152)	171	EI4HH (+9)	280	EI9FBB
1,018	EI9JF	166	EI8IU	247	EI3IO
DXCC Honor Roll		162	EI9E	234	EI2JD (+41)
Mixed		142	EI6HB	217	EI9JF
340	EI6FR/345	138	EI2GLB (+7)	201	EI8GS
338	EI7BA/342	129	EI9HQ	193	EI6IZ (+19)
337	EI7CC/351	120	EI5GSB	184	EI4BZ
333	EI2GS/340	114	EI4EX	161	EI9FVB
333	EI6S/351	105	EI1CS	156	EI1DG (New)
333	EI8H/360	101	EI3IP	134	EI6HB
Phone				131	EI9E
335	EI7CC/349	CW		119	EI3GV (+4)
332	EI6S/348	330	EI7BA (+6)	118	EI8IU (+2)
332	EI8EM/339	321	EI7CC (+5)	105	EI9HQ
Mixed		288	EI6FR	102	EI2GLB (New)
360	EI8H	267	EI9FBB		
351	EI6S	261	EI6IZ (+23)	17m	
351	EI7CC (+4)	253	EI9JF	323	EI7BA (+15)
345	EI6FR	252	EI2JD (+44)	249	EI9FBB
342	EI7BA (+4)	236	EI4BZ	192	EI6FR
340	EI2GS	205	EI8FH (New)	161	EI2JD (+58)
323	EI3IO	185	EI8IU (+3)	155	EI6IZ (+20)
306	EI2HY	166	EI1DG (+11)	146	EI9JF
301	EI9FBB	166	EI5GM	121	EI3IO
290	EI9O (+10)	160	EI6AL (+60)	115	EI8IU (+3)
287	EI9JF	140	EI7GY (+21)	104	EI6AL (New)
282	EI5GM	109	EI2IH	101	EI3GV (New)
277	EI2JD (+15)	109	EI4HM		
274	EI6IZ (+21)	107	EI/GM4ARJ	15m	
269	EI2CR			305	EI7BA (+26)
262	EI2GX	RTTY/Digital		237	EI6FR
262	EI8GS	245	EI7BA (+59)	229	EI9FBB
252	EI4BZ	177	EI1DG (+24)	202	EI2JD (+54)
227	EI8IU (+2)	142	EI6FR	193	EI3IO
226	EI9FVB	118	EI6HB	184	EI4BZ
213	EI1DG (+19)			180	EI8GS
210	EI6IL	Satellite - No Entry		152	EI6IZ (+14)
198	EI4GXB			142	EI9E
181	EI2GLB (+12)	160m		124	EI9FVB
177	EI4HH (+7)	216	EI7BA (+18)	118	EI6HB
173	EI6HB	207	EI3IO	110	EI3GV (+1)
167	EI6AL (+64)	128	EI6IZ (+11)	106	EI1DG (New)
164	EI9E	118	EI9FBB	106	EI8IU (+2)
152	EI7GY (+19)	102	EI2JD (New)	105	EI9JF
134	EI9HQ			100	EI2GLB (New)
129	EI5GUB	80m			
128	EI8HA	304	EI6S	12m	
127	EI9CJ (New)	274	EI7BA (+20)	275	EI7BA (+44)
120	EI5GSB	206	EI9FBB	172	EI9FBB
117	EI3HA	150	EI2JD (+26)	106	EI2JD (New)
111	EI5IF	137	EI3IO	100	EI3IO
101	EI7JQ	128	EI6FR		
101	EI8JB (New)	123	EI6IZ (+8)	10m	
100	EI4HQ	117	EI4BZ	269	EI7BA (+40)
Phone		101	EI8GS	253	EI3IO
349	EI7CC (+4)	40m		168	EI4BZ
348	EI6S	296	EI7BA (+12)	161	EI2JD (+27)
339	EI8EM	219	EI9FBB	161	EI6FR
338	EI2GS	191	EI2JD (+39)	157	EI9FBB
334	EI7BA (+12)	180	EI6IZ (+27)	151	EI8GS
331	EI8AR	177	EI9JF	144	EI7GL
325	EI6FR	176	EI3IO	128	EI4GK
300	EI8AU	171	EI6FR	111	EI9CJ (New)
294	EI3GV (+8)	135	EI4BZ	109	EI9E
284	EI9FBB	123	EI8GS	103	EI3GV (New)
264	EI4GK	117	EI7GL		
262	EI8GS	105	EI9E	6m	
261	EI2JD (+19)			160	EI3IO
230	EI9HX	30m		111	EI7GL
226	EI9FVB	304	EI7BA (+24)	106	EI2JD (New)
		218	EI3IO	102	EI9FBB
		201	EI9FBB	101	EI3EBB
		188	EI6IZ (+28)		
		167	EI9JF	2m	
		166	EI6FR	110	EI4DQ (New)



DXCC Band Status (23/1011)											
		160m	80m	40m	30m	20m	17m	15m	12m	10m	6m
10	EI9FBB										
10	EI3IO										
10	EI2JD										
9	EI7BA										
7	EI6FR										
7	EI6IZ										
6	EI4BZ										
5	EI8GS										
5	EI9JF										
4	EI3GV										
4	EI9E										
3	EI7GL										
3	EI8IU										
2	EI1DG										
2	EI2GLB										
2	EI6HB										
2	EI9CJ										
2	EI9FVB										
1	EI3EBB										
1	EI4GK										
1	EI6AL										
1	EI6S										
1	EI9HQ										
		160m	80m	40m	30m	20m	17m	15m	12m	10m	6m

## Lagan Valley Rally 2012

### Hillsborough - 3rd March 2012

<http://gi0dvv.co.uk/lisburnrally.aspx>

## Members advertisements are free

### For Sale:

100w 2m Microset Amplifier  
Tonna 17 Element Yagi  
Contact 083-3317710

### For Sale:

Yaesu FT1000MP Mark-V Field, HF Tx., 100watt output.  
mains voltage, Inrad IF Noise Reduction fitted, MH-31  
mic., handbook, no box, in perfect condition.  
..... €1,000 collected.  
CG-3000 Remote auto tuner, handles 200 watt, 200  
memories for almost next to instant retuning, instructions,  
box, will include 50/60 ft of RG213 & 2 core power cable  
..... €225 collected.  
Contact Bill, 021-4384314 or fahy963@gmail.com

### For Sale:

Alinco DR-635E, Vhf/UHF FM Transceiver 50/35w  
Boxed. As new ..... €250.00  
Tonna 9 Ele 2m Beam (used) Buyer Collects ..... €25.00  
Lowe HF-225 General Coverage Receiver.  
Includes P.S.U. and keypad ..... €200.00  
Phone Bill EI9EW on 087-6791471

## Members Advertisements

**For Sale:** Yaesu FT 290R 2 metre multimode, boxed with mobile slide-in bracket/manual.  
BNOS 2 metre LP 144. 3/50w out linear amp, pwo.  
Motorola MC Micro 4m Tx. 20 ch. Prog 70.250 /70.4875 MHz, pwo. Also folded dipole for 4m.  
Ameritron ARB 704 amplifier interface/buffer, compatible with most amplifiers. Protect your amp relays. Brand new and boxed with all cables manuals including plug and play for IC 706 etc.  
Pat EI6HF085 7640044 and 059 91 40086

**For Sale:** Pro2035 1000 channel scanner. €140.00 o.n.o.  
**Wanted:** Icom Pro106 Mk2 HF/VHF/UHF  
Cash paid for right set  
EI5DCB @ 086-0693873

### For Sale:

Buddipole System ...€200.00  
MFJ 949E HF versa tuner with dummy load ...€100.00  
HF Low Pass Filter ...€30.00 MFJ 924 70cms tuner ...€50.00  
MFJ 921 2m Tuner ...€50.00 Yaesu 2600m 2m Mobile ...€100.00  
PK 232MBX TNC No Cables ...€100.00  
KPC3+ with APRS firmware spec, no cables ...€100.00  
APRS TinyTrak4 with Cables for Yaesu FT 7800 ...€80.00  
Timewave DSP 59+ ...€120.00  
Charlie EI8JB at 087 6265418 or email [charlie.carolan@gmail.com](mailto:charlie.carolan@gmail.com)

### For Sale:

MFJ-1263 Microphone Control Centre, ...€70.00.  
Arcoide Duplidisk II Hardware IDE Radio Controller, ...€100.00 (Never Used)  
Guruplug Server Plus, Embedded Server, ...€70.00.  
John EI7IG 086-8167310

### For Sale:

Strumtech Versatower BP36, 36ft telescopic & tilt over tower, with winches. Buyer to dismantle. Can be seen in Limerick, Offers to Tedy EI1603 on 087-9671567

### For Sale:

Kenwood TS-2000-X, HF+VHF+UHF+50MHz+23cm  
In mint condition all manuals plus original box. Picture of rig can be emailed to potential buyer. Price ...€1,100.00  
Contact Nicky EI3JB on 087-6123261 or  
Email, [nickymadigan@gmail.com](mailto:nickymadigan@gmail.com)

### For Sale;

Cushcraft XM 510: 10 Metre 5 Element Yagi.  
Boxed, As New  
John@airwave.ie or 087-9471657

### For Sale:

FT101ZD Transceiver, FC902 Antenna Coupler and SP901 speaker. Matching set. Original manuals included. €400.00 the lot.  
Contact Owen EI4DI on 087 2522637



# SWR and what it means

By Tony EI5EM

Have you ever wondered what the readings on an Standing Wave Ratio meter actually mean and how the value 3 is exactly at the mid point of the meter scale? Well, I hope having read this short article that it will be a little clearer to you.

When a transmitter is fed into a perfectly matched antenna system (antenna and feeder), virtually all the power is radiated into the ether.

However, perfection is rarely achieved and the result is that when the system is not perfectly matched some of the generated power is not radiated but reflected back into the transmitter due to the presence of standing waves in the system.

The SWR indicates how much of the transmitter power is reflected back. Too much reflection, in addition to being inefficient can damage the output devices in the transmitter. An SWR of below 3:1 is usually considered reasonably low and tolerable. Modern solid-state rigs usually have sensing circuits that detect high SWR and automatically throttle back the output power to prevent damage to the output stages.

An SWR reading of 3:1 indicates that 25% of the output power is reflected back into the transmitter and wasted. So why is the meter indicator half and not 25% of the scale? Well the traditional moving coil meter needle moves in a linear fashion and the degree of movement depends entirely on the magnetic field generated by the current flowing through the coil. Moving coil meters have what is called a Full Scale Deflection specified. The FSD is the current that needs to flow through the coil to cause the needle to deflect full scale.

To read SWR, the meter potentiometer is adjusted with the switch in the FORWARD position so that the FSD indicates the relative output power from the transmitter. Switching the meter to REVERSE measures the relative reflected POWER. However the scale calibration is not linear as will be explained later.



1 to 1 SWR



2 to 1 SWR



3 to 1 SWR



Calibrate SWR

Suppose the FSD of such a meter is 10mA. If 5mA flows through the coil then the needle deflection will be half the scale and a 1mA flow will deflect one tenth of the scale. That is simple enough. However it gets a little more complicated when we need to calibrate the meter for reading power (Watts). The calibration is no longer linear and values become bunched together towards the top end of the scale.

Doubling the current will in fact increase the power by a factor of 4 and trebling by a factor of 9, because power is proportional to the current value squared (multiplied by itself). This explains why a half-scale deflection on the meter indicates only a quarter of the power indicated by a full-scale deflection.

A little simple mathematics are required to understand the relationship between current and power.

Going back to Ohms Law  $V = I \times R$ , in other words Voltage (Volts) = Current (Amps) multiplied by Resistance (Ohms).

Remember also that Power (Watts) = Volts x Current ( $V \times I$ )

But from Ohm's Law as  $V = I \times R$  so we can substitute this for V in our Power formula to give the new formula for Power in Watts

$P = (I \times I \times R)$  or Power in Watts equals current in Amperes squared multiplied by Resistance in Ohms

Suppose we have a 100 Watt transmitter operating into a 50 Ohm matched antenna system. In this case  $100 = I \times I \times 50$  and therefore  $I \times I = 2$  and  $I = 1.414$  Amperes (square root of 2). That is the current that flows into the antenna system.

Now suppose we adjust the output RF current of the transmitter by half to 0.707 Amperes. Our output power will now be  $0.707 \times 0.707 \times 50$  Watts ( $I \times I \times R$ ) = 25 Watts.

Halving the current has reduced the output power to a quarter of the original value (25%) because power is proportional to the square of the output current.

An SWR meter is also often referred to as a VSWR (Voltage SWR) meter. By convention SWR is expressed as  $(V_f + V_r) / (V_f - V_r)$ .

In our case we will use current instead of Voltage as they are directly proportional.  $V_f$  = forward voltage and  $V_r$  = reflective voltage.

Suppose as in our example we found that the forward current was 1.414 Amperes ( $I_f$ ) and the reflected current 0.707 Amperes ( $I_r$ ).

$$SWR = (I_f + I_r) / (I_f - I_r)$$

$$SWR = (1.414 + 0.707) / (1.414 - 0.707) = 2.121 / 0.707 = 3 \text{ or an SWR ratio of } 3:1 \text{ (mid scale on the meter*)}.$$

Looking at another example where reflected current is 0.47 Amperes ( $1/3$ ), The SWR in this instance is  $(1.414 + 0.47) / (1.414 - 0.47) = (1.884 / 0.944) = 2$  or a ratio of 2:1 (a third of the scale\*)

Finally, suppose the forward current is 1.414 Amperes and no current or 0

(Continued on page 31)



(Continued from page 30)

Amperes is reflected then the SWR will be  $(1.414 + 0) / (1.414 - 0) = 1/1$  or the often sought and elusive 1:1 ratio. Their will be no meter deflection in the reverse position in that case.

I hope that this little article has shed some light on what SWR measurements mean and has not confused you further. I have tried to keep it as simple as possible but some maths is essential.

\*The coil of such a meter can usually only pass microamps or milliamps. To measure larger currents low value shunt resistors are placed across the coil to pass the high current allowing the smaller current to flow through the meter coil. The value of the shunt resistor has to be calculated for desired meter FSD. However, that is a topic for another article.

73 de Tony EI5EM

### 5 MHz Newsletter now online

A new Newsletter has been launched to support the growing number of 5 MHz operating permissions globally - it's the 5MHz Newsletter.

Edited by Paul Gaskell, G4MWO, one of the original RSGB 5 MHz team, it aims to be both an accurate information source of news about 5 MHz and a platform for exchange of ideas, be they theoretical, operational, constructional or just general comments about the band.

You can freely access the 5 MHz Newsletter from Google Documents at <http://tinyurl.com/6fkchcmf>

### Portuguese Repeaters Victims of Economic Crisis

Several amateur radio repeaters and Echolink nodes in eastern Portugal are off the air, apparent casualties of the European economic crisis. In a letter to Southgate Amateur Radio News, Miguel Andrade, CT1ETL, reports that four repeaters and one Echolink node along the Spanish border are offline due to a lack of financial support. He says discussions are under way "to achieve the necessary partnerships and sponsors to assure that all these stations can work again." However, he notes that at this time, "it is not possible to predict any date for their reactivation.

## CQWW CW EI Records

Up to and Including 2010

Callsign	Score	QSOs	Zones	DXCC	Year
<b>High Power</b>					
All EI5DI	1,965,378	2,564	94	308	2008
10 EI6BT	198,128	838	31	91	2000
15 EI8GP	358,150	1,388	32	98	2000
20 EI3DP	525,968	1,715	36	106	1996
40 EI5DI	558,363	2,222	33	106	2010
80 EI4BZ	142,870	1,140	18	83	2001
160 EI2CN	141,723	1,066	17	70	2008
<b>Low Power</b>					
LAll EI/SP4Z	1,610,690	2,321	105	365	2006
L10 EI5DI	238,784	1,087	25	66	1992
L15 EI6FR	246,848	1,171	32	101	1998
L20 EI6FR	264,537	1,035	29	104	1996
L40 EI6DX	111,100	967	20	81	2005
L80 EI6DX	110,732	900	16	78	2008
L160 EI7IU	31,507	482	11	50	1998
<b>QRP</b>					
All EI8FH	330,792	751	56	208	2010
<b>Assisted High Power (Cluster)</b>					
AAll EI6IZ	2,477,115	2,64	115	416	2010
A10 EI6FR	370,678	1,269	36	118	1999
A15 EI4CF	217,755	759	29	106	2009
A20 EI6FR	381,150	1,406	32	118	2010
A40 EI6DX	524,914	2,066	39	130	2009
A80 EI6FR	150,490	122	16	85	2009
A160 EI2CN	181,968	1,174	22	80	2010
<b>Assisted Low Power (Cluster)</b>					
AAll EI7CC	247,55	560	63	193	2010
A10 X					
A15 X					
A20 EI0W (EI7KD)	333,710	1,310	34	117	2010
A40 EI9KC	21,870	168	14	67	2010
A80 EI9ES	2,100	54	7	28	2010
A160 EI2JD	5,832	83	9	45	2010
MS EI7M	7,874,332	6,230	152	579	2005
M2 X					
MM X					

## Contest Calendar

All Times UTC

### November 2011

5-6	Sat 1200 - Sun 1200	Ukrainian DX Contest	CW/SSB
12-13	Sat 0000 - Sun 2359	WAE DX Contest	RTTY
12-13	Sat 0700 - Sun 1300	JIDX Contest	SSB
12-13	Sat 1200 - Sun 1200	OK/OM DX Contest	CW
19-20	Sat 1200 - Sun 1200	LZ DX Contest	CW/SSB
26-27	Sat 0000 - Sun 2400	CQWW DX Contest	CW

### December 2011

10-11	Sat 0000 - Sun 2359	ARRL 10-Meter Contest	CW/SSB
17	Sat 0000 - Sat 2359	OK-DX Contest	RTTY
17-18	Sat 1400 - Sun 1400	Croatian Contest	CW
17-18	Sat 1500 - Sun 1500	Stew Perry Topband Challenge	CW

### January 2012

2	Mon 1400 - Mon 1700	IRTS 80m Counties Contest	CW/SSB
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Thos Caffrey EI2JD

# Operating Portable on 501-504 kHz Medium Wave

By Finbar O'Connor EI0CF

In June 2009 Ireland joined a growing number of countries permitted to operate on a small portion of the medium wave band, just below the commercial broadcast segment, in the range 501 - 504 kHz. Several stations were granted permission and operations commenced.

As has been documented elsewhere many stations have been worked, both in band and cross band, at home and abroad, ranging from Continental Europe, across the Atlantic to the USA and Canada and down to the southern end of Ukraine and finally up to Iceland, Norway, Sweden and Finland and also being heard in Moscow.

A notable feature of this band is the steady, reliable nature of groundwave coverage and with this in mind I recently availed of the facility whereby portable operations can take place.

ComReg, together with the IRTS and the individual involved, require that each event is applied for, giving relevant dates, location, contact details, hours of operation and the power of the transmitter being used.

In the period leading up to all this it was necessary to build and test a viable portable station, based on the use of my Berlingo van.

A 30 foot part of a 40 foot Spiderbeam fibreglass pole was used with a simple round wooden peg to secure the Tee wire antenna, which was fabricated from twin twisted multi-strand speaker wire. The vertical using both, the rest pulled apart and forming the two horizontal legs.

A 100 metre roll of 1.5 mm insulated earth wire was cut into 16 lengths to provide radial wires, with lugs soldered to one end and a bonding bolt used to secure a single point for the radial kit. The far ends had a small loop formed and insulating tape sealed and secured them. The loop providing an eye for small L shaped



stiff wire, fashioned from discarded coat hangers, an ideal and cheap way to hold the ends of the radials wire in place, in the ground, when deployed.

To secure the antenna support to the van, I refer you to the excellent idea described by John EI7BA, on his web page, for a ball hitch connection.

[http://www.qsl.net/ei7ba/a\\_ball\\_hitch\\_mobile\\_mount.htm](http://www.qsl.net/ei7ba/a_ball_hitch_mobile_mount.htm)

Using this superb idea, I got the welder out and made one for myself. It worked perfectly.

I now had the support, the wire antenna, with a ballpark figure for what might resonate, and the radial kit. I needed a dedicated Antenna tuning unit. An old variometer and two extra fixed multitap coils were selected. A home made 1 amp ammeter and SWR twin meter unit completed the fit out. These were all assembled on a base with a handle on the top, making it easy to move around whilst out and about.



The main antenna for 500 kHz was disconnected, left floating, and the van set up with all this gear, but no transmitter. Instead my little antenna bridge, running off a 9-volt battery, provided the necessary signal to start testing for basic resonance.

Whether from sheer good luck or some sub-conscious input, resonance fell

within the range of the variometer with only one of the two extra coils in circuit. The relative height and length also play a part in the range of resonance secured. Matching to 50 ohms was then optimized by selecting 4700 pf Mica capacitors using those Croc Clip links. The available values range from 1 nF to 14 nF.

I have a selection of 500kHz transmitters, two of which are to the design of Roger GW3UEP, who lives 10 miles inland from the coast, in south Wales. His 500kHz web site is well worth checking out, containing plans for versions of his 500 kHz transmitters, test equipment pictures and recordings of 500 kHz activities.

<http://www.gw3uep.ukfsn.org/>

One of these was used to put some RF into this first portable style installation, and by arrangement, Roger listened and heard my signal. We delightedly completed a short contact, with my transmitter running just 10 watts.

Things were looking good.

One of the very valuable things about portable operations stems from the need to bring together several elements to secure a working radio station, without the usual backup we enjoy from home. Planning is essential. Doing a dry run, i.e. actually physically building the intended station, then notating all the gear required. Making a list. Providing backup items, particularly those that which if broken, lost or whatever, would render the whole radio station non-viable. This also extends to the operator of the equipment. Will you be warm, or cool enough, have shade, food, water, are you rested enough? Always be prepared to abandon the project if safety is compromised, for whatever reason.

Now that I had a viable portable station for 500 kHz working, it was time to head





off and test both the equipment and myself in the real world, but at this stage without any live transmissions taking place.

Several sites were chosen; particular emphasis was placed on remote sites, i.e. high up on mountains, or near the sea. All sites worked very well, but those by the sea proved really excellent. Reception of NDB's, Non Directional Beacons, providing a ready supply of medium to low frequency signals for range testing.

I was now itching to "have a go" out in the wilds, on 500 kHz.

Using the method required by ComReg, an application was made for several sites, on specific days.

In early June I loaded up the van with all the gear and headed off for the mountain above Redcastle, County Donegal.

Using a narrow track and climbing higher, to about 270 metres a place was found leading to an old quarry. It had started to rain. Typical! By the time I had erected the support pole, pulled out the top hat wires and secured them using small nylon line and deployed the radial wires around and below the vertical drop wire, my trouser ends were very wet.

Plugging in the 12-volt supply, the receiver was very quickly perked up, using the variometer. The Morse key connected to the QTX transmitter and the transmit / receiver switch flicked over. Time to get some RF flowing in the antenna. Sure enough, on key down, the antenna current meter shot right up to 400 mA, but the SWR match was not exactly perfect. Time to work those Croc Clips and start selecting shunt capacitors to find the perfect match.

Soon I had that sorted to my satisfaction, Antenna current was now up to 550 mA and a quick return to receive showed that Roger, GW3UEP was already tuned up on frequency.

GW3UEP DE EI0CF/P HW K

He came back straight away.

Oh joy, we were on the air on 500, in a remote mountain area, the top of my antenna almost tipping the clouds, as they swept past.

Standing at the back door of the van, open to the elements, the tips of my fingers reaching for the knob of my very favourite old Amplidan morse key, snug beside the other bits and pieces of equipment on the van floor.

My logbook, with its pages flapping back and forward in the wind soon had the first



500 kHz portable contact details documented. A full hour later, solid steady signals continued, at a distance of 250 miles, proving just how good ground-wave signals can be, we terminated our communications from a remote portable location, happy with the results.

Within 12 minutes I had dismantled the station and was on my way to Moville and a strong cup of coffee at the café on the town's main street.

Several others Portable operations have taken place. A number have also occurred at my home location.

We live right beside the sea; high tides lap up on to the salt marsh, which is part of the property.

Driving a single earth rod into the sea shore to a depth of 1 metre and without using the radials, just a single wire between the rod and the ATU earth, the 1 amp RF meter had its meter needle slamming against the end stop. Lots of antenna current for 15 watts transmitter output power. Those same 15 watts only providing, at best, 550 mA, whilst up on the mountain sites.

Finally, it was thought productive to try a Kite supported antenna from the seashore portable set up. Winds on the day selected seemed strong enough to enable my Delta shape Kite to head aloft with a flying line and antenna wire attached. The Berlingo van was driven down on shore, everything connected and tuned up. All was well, or was it?

The receiver now seemed quite dead, no band noise, no antenna current on transmit. Looking skywards I could see nothing. My eye followed the antenna wire heading for deeper water. Then I saw it, the Kite had plunged into the sea. The following 30 minutes entailed untangling loads of seaweed. Line wrapped around rocks, barnacles, everything unimaginable. What a mess! I almost gave up, but knew that Roger would be coming up on frequency, on sked, in about 15 minutes.

Eventually I managed to get the kite skywards again. By now the wind was acting more unpredictably. I established contact with Roger and he immediately gave me an S7 report for my 15 watts. This equated to the report I would get from my main station antenna running 100 watts. My single ground rod and 150 feet of wire were doing the business.

We carried on our contact, but what remained became a battle of wits with a kite constantly diving down and soaring up again. Several times the antenna wire was in part lying on the sea shore, antenna current way down to 200 mA or lower. My left hand on Variometer tuning knob, tweaking the setting, as best as possible, then pulling in the slack to keep the antenna wire off the ground, then feeding it out again to a misbehaving kite.

Keying away in Morse with my right hand, keeping Roger informed, updated so he could understand why my signal was changing both in pitch (sudden antenna mis-match conditions) and signal strength.

Luckily he was also making a recording, which proved later to be a fascinating record of a difficult portable antenna and station operation.

It's remarkable how tolerant, despite the wildly changing antenna conditions, the system actually was, in practice.

Communications were maintained despite all these negative factors, despite severely decreased radiated power at times.

Several other tests were conducted within these experiments which would have been almost impossible to conduct without the challenges thrown up by these portable operations. To my mind the 501 – 504 kHz band exhibit a distinct advantage for enhanced groundwave coverage over that available to higher frequencies.

Relatively simple equipment deployable in remote locations and/or without the availability of grid power would provide a solid backbone link or network, in times of emergency. Transmitter power output was kept deliberately low to ensure that a higher ERP would not mask any possible weakness in the system.

I am happy to conclude that Medium Frequency CW proved it's worth once again. Already I have further plans to test smaller, more compact portable antenna and earthing systems in more remote locations.

Finbar O'Connor, EI0CF  
Malin, County Donegal.

# Mayo Rally 2011



The Mayo Radio Club  
is pleased to announce their 2011

## Rally

In the

Welcome Inn Hotel Castlebar

on

Sunday November 20th

Doors open at 1100 - Admission €5.00



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Full details will be available shortly and will be announced on the club website:  
[www.ei7mre.org](http://www.ei7mre.org)

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Dave EI9FBB

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Padraic Baynes EI9JA  
Telephone 087 6957154  
or email  
[pbaynes1@eircom.net](mailto:pbaynes1@eircom.net)

### Saturday Evening Lecture Programme

Commencing at 1900, Pat Fitzpatrick EI2HX will give a talk and demonstration on Amateur Television

At 2100, Dave Deane EI9FBB will give a talk on the ARRL DXCC programme and the Logbook of the World system.

Full details can be found on The MREN website - [www.ei7mre.org](http://www.ei7mre.org)



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## **Lough Erne Amateur Radio Club Annual Rally The Share Holiday Village, Lisnaskea, County Fermanagh BT92 0EQ**

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### **Dayton's 2012 Theme: "Internationally Connected"**

Planners of the Dayton Hamvention® have chosen "Internationally Connected" as the show's theme for 2012.

According to the Dayton Amateur Radio Association, which sponsors the three-day event each May, this year's choice was made to recognize the many hams who travel to Dayton from all over the world and to acknowledge "the important role that ham radio plays in promoting international goodwill."

DARA has set up a new committee specifically to work with foreign guests. The 2012 Hamvention will be held from May 18-20.

The show brings about 20,000 people a year to the Dayton area and generates some \$10 million in revenue for the region.

### **Ham Radio Satellite Milestones**

December marks the 50th anniversary of the launch of OSCAR-1, the first amateur radio satellite and the first non-government satellite ever placed in orbit.

In addition, October marked the 30th anniversary of the launch of UoSAT-1 (UO-9), built by the University of Surrey in England.

According to the AMSAT News Service, UO-9 was the first amateur satellite to carry an on-board computer, to have battery and attitude management capabilities, a CCD camera and other features that became the foundation for amateur satellite technology in future years.



## **Irish Radio Transmitters Society**

### **80th**

## **Annual General Meeting Annual Dinner & Rally**

Hosted by  
**Dundalk Amateur Radio Society**  
at The Fairways Hotel, Dundalk

### **April 21/22nd 2012**

Contact Thos Caffrey EI2JD  
[thoscaffrey@hotmail.com](mailto:thoscaffrey@hotmail.com) **087-2953256**



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